

POPULAR Computing WEEKLY

Lo Rack

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20/27 December 1984

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Vol 3 No 51

Acorn plans new BBCs

ACORN is thought to be working on two new computers to replace its now ageing BBC micro next year.

The first, tentatively called the BBC B+, will be a 64K Ram version of the present BBC machine. The micro will be compatible with existing BBC

software but with a switchable display mode, so it will be possible to displace the screen Ram giving the machine up to 64K of usable memory. A similar system of memory organisation is already being marketed as an add-on Ram board for

continued on page 5

BT 'mole' theory squashed

THE argument over whether a British Telecom mole' exists who is supplying confidential system information to hackers (see *Popular Computing*

Weekly, December 13) seems to have reached a conclusion.

Last week Timeframe International, Prestel's second largest information provider, which suggested on Prestel that there could possibly be a BT 'mole' at work, climbed

```
to: ICL-NW-BEC-1 {ICL }
to: ICL-NW-BEC-2 {ICL }
to: ICL-SW-BEC-3 {ICL }
to: ICL-NW-IN-A/C {ICL }
to: TELEBOX {ICL }
to: J.V. PATER {ICL }
to: ICL-SW-DEMO-1 {ICL }
From: TELEBOX {ICL }
P: 4-Dec-84 10:53 GMT SWS 84 (12)
Subject: Hacker here!
```

MSX prices look set to tumble

MSX prices are tumbling in a last-minute bid for the Christmas market.

Both Toshiba and Spectrum Group have announced price cuts in their respective machines, the HX-10 and the AVT Goldstar FC-200.

The HX-10 price has dropped by £40, from £279.95. Two days after Toshiba announced its cut to £239.95, the Goldstar, launched at £239.99 was reduced in price to £199.99, making it £100 less than Sony, Sanyo and Mitsubishi models.

"This is a permanent price change, for the HX-10, and not just for the Christmas rush," explained a Toshiba spokesman. "It's a lively challenge for the leadership of the MSX market — we were the first to

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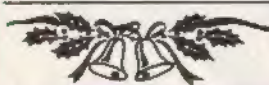
down. Timeframe was blacked out from the network following its allegation, and was preparing a court injunction against its removal by BT.

"We have agreed to discontinue proceedings commenced against British Telecom in the High Court in return for reinstatement of our database on Prestel upon mutually agreed terms", said a spokesman at Timeframe.

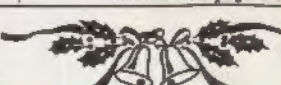
Timeframe's original allegations were given weight when three hackers broke into ICL Telecom mailboxes two weeks ago. One of the hackers involved has claimed he received the necessary passwords to access the ICL pages in a message left in his own electronic mailbox by an individual signing him or herself 'BT Mole'.

British Telecom has always

continued on page 5



READERS POLL



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Well, what do you know?

The MSX manufacturers are beginning to realise that £276-plus is really a bit on the steep side for a conventional 64K Z80 micro.

Toshiba has cut its price by £40 to £239 and Goldstar has followed suit by dropping to £199. The other MSX companies may well now consider dropping their prices accordingly.

At under £200 the MSX standard begins to look a bit more attractive. Still, Commodore in turn may feel sufficiently threatened to cut the cost of its C64 well under £199 after Christmas, following last week's example set by Atari. The Atari 800XL is now only £129.

Now take two paces back and try to look objectively at the BBC micro. At £399 for a 32K 8-bit machine it now represents pretty appalling value for money. Even the 32K Acorn Electron at £199 looks overpriced.

Surely Acorn must do something soon with the BBC micro. Either it must cut the cost dramatically or it must launch its larger memory BBC B 'Plus' model early next year.

On a simple memory-for-your-money scale the Acorn machines are now both lagging way behind their competitors.

Changing the subject totally, this is our Christmas issue.

May we wish you a Merry Christmas and a Happy New Year from all at *Popular*.

Don't take in too much of the Christmas spirit all at once — see you in the New Year.



Presents...

News > Commodore's C128 micro confirmed

Star Game > Everybody do the Train Shuffle written for the BBC B and Electron

Hardware Review > John Cochrane draws a line between the Sakata SCP-800 and the Penman plotters

Review of the Year > What happened in 1984 — who made it big, who crashed and when — we tell it all

Software Reviews > *Space Pilot* from Anirog on the 64, *Trouble in Store* for the Oric from Orpheus

Spectrum > Festive fun for any Spectrum from the pen of Peter Millar

Staff Poll > The views, opinions and downright prejudices of the *Popular* team — 1984 software reviewed

Dragon > Help Santa collect his presents with the aid of Darren Howe

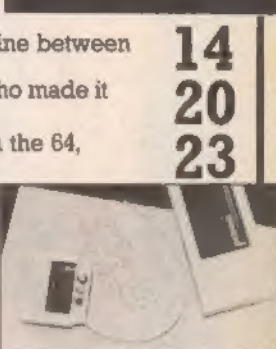
Readers Poll > Tell the people who matter what you think — vote, vote, vote!

Commodore 64 > Christmas Eve shown in graphic detail on the 64 by Mark Gornall

Best of the Rest > Letters 11 > Sinclair competition result 17 > Amstrad 30 > Seasonal BBC page 31 > QL Biorhythms 35 > Open Forum 48 > Arcade Avenue 48 > Music Box 50 > Bookends 63 > Adventure Corner 69 > Peek & Poke 61 > Readers Chart, Top Ten, Diary 74 > New Releases 75 > This Week 75 > Puzzle, Ziggurat, Hackers 78

Futures...

Screen dump to printer on QL, dissolve your Spectrum screen...and Star Game is Fly-by-night on C64

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3238
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ABC

56,052 copies sold every week
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How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

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C128 confirmed

COMMODORE'S new 128K machine — the C128 — is set for launch at January's Consumer Electronics show in Las Vegas.

The machine will be produced in two versions — one of which will contain a built-in twin disc drive. Unlike the Plus/4, neither model will include any built-in software.

The 128K memory of the machine is divided into two

'banks' of 64K each, as its design is based on the 6502 processor which can only address up to 64K. The first 64K is immediately available — and is fully compatible with existing C64 software; second becomes available by hitting a function key.

Both C128 machines are expected to be shipped to the UK in April.

Acorn

◀ continued from page 1

the BBC by Aries and the company is believed to be working with Acorn on the BBC B+. The B+ is expected to sell for around £400.

The second new Acorn machine is called the C30. The machine is unlikely to be launched before Summer 1985 and will probably use a 16-bit version of the BBC machine's 6502 processor. Acorn's likely choice will be the W68SC816 chip, being developed by the US company Western Design Centre.

The W68SC816 is not quite a true 16-bit processor, but it can address a larger area of memory, up to 24 megabytes. For Acorn it also has the big advantage that it is pin-compatible with the 6502 chip used in the existing BBC machine. The C30 is expected to cost around £800.

Thurnall enhances disc drive

THURNALL Electronics has released an enhanced version of its Spectrum disc drive.

The new version will enable users to transfer their programs from cassette or micro-drive to the discs. The drive, which previously used a Hungarian MCD disc system, now uses the standard Hitachi drive system, running 3inch discs.

The disc drive is fully compatible with microdrives, Interface 1, printers and joysticks. A Tasword package has also been developed, with Tasman's permission, which will enable users to save files to the disc system to use with Tasword.

The disc system, which costs £219.95, contains the disc drive,

Mole squashed

◀ continued from page 1

firmly denied the existence of any moles: "There never was a Prestel 'mole' and no-one has ever suggested a BT Gold mole," commented an official spokesman.

The three hackers used the passwords from the so-called BT Mole to gain access to British Telecom's BT Gold information system using a VTX 5000 modem linked to a Spectrum.

The message from BT Mole detailed BT, BT Gold and terminal pass codes together with ICL identity numbers.

The hackers were able to gain access to a number of ICL mailboxes sending messages such as 'Hacker here' and 'Hacking (yet again)' to 30 to 40 other mailboxes.

They also entered ICL's Telex box and sent telexes to ICL regional offices in the UK, to

regional offices of BT, and one to the News editor of ITN, Steve Clark.

Steve Clark confirmed he had received a telex from ICL from someone purporting to be a hacker, he said, "The telex claimed that similar telexes had been sent out to various other accounts."

The three hackers also claim that the motive for their break-in was as a protest against BT's security, and to draw BT's attention to security lapses.

A spokeswoman for ICL commented, "The mailboxes that were broken into were unprotected with no special passwords needed to enter them, so to hack them would not have been too difficult. Although, it is annoying there would be no confidential information kept in those boxes."

"Since the hacking, those mailboxes have had passwords put into them, so they are now protected."

Microdrives no price cut

THE price of Sinclair's micro-drive cartridges now seems very unlikely to come down this year as originally promised by the company.

In the summer, Sinclair managing director Nigel Searle said that Sinclair would cut the price of the cartridges from their present price of £4.95 "before the end of the year".

Last week, a Sinclair spokesman said, "I've heard nothing about the planned reduction, and I don't think there will be any news in that area."

Sinclair is considering the possibility of offering Spectrum + machines in a form of upgrade from the ordinary Spectrum. Whether owners would exchange their 'rubber-keyed' models for the Plus, or whether the up-grade would be made available in kit-form has not yet been decided.

tyres are entirely made of plastic, while the chassis is made of pressed steel.

The CS is intended to be the first in a series of Sinclair cars, and the bottom of the range.

It is being made at the Hoover plant in Merthyr Tydfil, and Sinclair plans to manufacture over 100,000 of the cars in 1985.



an introductory program, manual and leads.

Details from Thurnall Electronics, 95 Liverpool Road, Chishead, Manchester.

Sinclair car due out soon

THE much discussed Sinclair electric car is due to go on sale in January, for around the same price as a QL computer, just under £400.

The car has been designed for either commuting or leisure purposes. Its top speed is just 15 mph and its twin electric batteries give it a range of 24 miles after being fully charged. The batteries drive a motor derived from that in a conventional automatic washing machine.

The car, currently code-named the CS, is just 6½ feet long and 2½ feet wide. It is a single-seater and in its basic form it is open-topped. A roof cover will be available as an optional extra.

The bodywork, wheels and

Amstrad games from Hewson

HEWSON Consultants launched a new range of products last week, aimed at the 'post-Christmas' market.

Of the games, only one is brand new — *Technician Ted*, a *Jet-Set Willy*-type game set in a (silicon) chip factory. It is available for Spectrum and Amstrad CPC464 machines (£5.95 and £7.95, respectively).

The highly rated graphic and text adventure *Fantasia Diamond* has been converted for the Amstrad at £7.95. This game will also be available for the Enterprise in February, under Enterprise's own name, as will *Heathrow Air Traffic Control*.

Also for the Amstrad, Hewson launched *Heathrow International ATC* at £7.95,

consisting of two games — *Heathrow*, complete with Concorde on one side of the tape, and *Schipol Airport* on the other.



"This year retailers have been far more cautious about stocking the shelves with software for Christmas itself," said Hewson managing director Andrew Hewson. "We feel there will be a demand after Christmas for new games".

More news on page 7

REAL ARCADE ACTION! FROM JETSOFT



BMX STUNTS

BMX STUNTS Based on the original arcade game this action packed game challenges your skill over six tests, straight race, wheelie, ramp jump, slalom, bunny hops and the ultimate test over a V.W. beetle in the Beetle ride.

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2 minutes

Cavelon II

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games for
Commodore
64

FAST LOAD
1 1/2 minutes



Can you destroy the wicked wizard of castle Cavelon? Can you avoid his mystical powers? Only after negotiating the six levels in his castle. Collect all the door pieces before you can attain the next level, pick up shields for extra points. Help is at hand in this all thrills, all action, real arcade game, when Excalibur appears, achieve indestructibility - but only temporarily.

Quari

27 levels of increasingly difficult real arcade action. Based on the game Bongo, you must avoid the chasing dinosaur, pterodactyls, falling rocks, native spears and bouncing Bongos. Negotiate rope bridges and erupting volcanoes, picking up the treasures of a lost civilisation as you go - and finally cage the dinosaur if you can!



FAST LOAD
1 1/2 minutes

SPRITE AND CHARACTER EDITOR

SPRITE AND CHARACTER EDITOR

The Jetsoft Sprite and character editor is a professional quality character editor written entirely in machine code. It can be used to write new or modify existing character sets. It is quick and easy to use having a number of sophisticated commands not available on most other editors, along with concise on-screen instructions.

JetSoft

the
arcade people 061 775 0333

Maplin's hero comes to UK

MAPLIN Electronics, well known as suppliers of electronic and computer components has launched Hero Jr on to the UK market.

Hero Jr is claimed by the company to be 'the world's first fully pre-programmed and programmable personal robot.'

Says David Snode of Maplin, 'With his special personality modes and pre-programmed routines, he is the first real home companion robot.'

These routines include spontaneously spouting poetry, singing nursery rhymes, seeking out human companions and playing games. More seriously, although designed primarily for entertainment, using sonic and infra-red sensors, Hero Jr can also be used as a home security guard.

Powered by two six volt rechargeable batteries, the 19inch robot, weighing in at 21.4lbs, is controlled by a 6808 chip with 32K of monitor Rom and 8K Ram expandable up to 24K. An RS232 interface has been included, so it is possible

to program the device from most home micros.

Hero Jr is not cheap. It costs £899 in kit form and £1099 fully-assembled. A de-luxe version is available at Harrods costing £1496.

Details from Maplin, PO Box 3, Rayleigh, Essex.

MSX prices tumble

◀ continued from page 1

launch in the UK, and so we're anxious to maintain that leadership."

"We certainly didn't think of it as a deliberate move into the Goldstar's price range."

Commenting on the cut in the price of the Goldstar, Neil Johnson joint managing director of Micro Dealer UK, which distributes the machine, said, "The MSX Goldstar has just the same facilities as its more expensive Japanese rivals. We are simply ensuring that consumers are faced with their original choice. Why pay more for the same thing?"

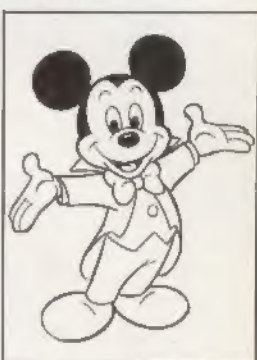
"The real question to ask is

Mickey goes on C64

WALT DISNEY'S link-up with US software house Sierra, announced in June, has produced its first programs for the Commodore 64.

Three titles are now available — *Winnie the Pooh in the Hundred Acre Wood*, *Donald Duck's Playground* and

Mickey's Space Adventure. All three have a strong educational slant and are aimed at the 7 to 11 age group.



why did a strong brand name company like Toshiba feel it necessary to slash its price?"

Whether other MSX companies follow suit and cut their prices remains to be seen, but at the top end of the price range, both Sony and Mitsubishi (64K machines each £299) claimed their prices would stay the same.

A Mitsubishi spokesman commented: "Our 32K machine is £249, and therefore in the same sort of price area. Certainly Mitsubishi are not considering a reduction for the 64K model."

"There is no kind of agree-

ment within the MSX working group to keep prices consistent — now that the machines are launched, it's very much a go-it-alone situation."

Steve Dowdle, product manager for Sony, said, "We are not planning a price drop. We feel that £299 is the right price for the quality of the product."

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A loss leader

No Amstrad Bug? Or am I spoiled by Sinclair?

Try editing below a Data statement. For example, 50 Read Profiler(n) + "... Also 35 a\$ = "arnold" + "... This is demonstrably a housekeeping error — the \$ makes it a dynamic variable.

Breaking from a tape operation often leaves HiMem temporarily 4K lower than usual. Clear seems to be the simplest way to overcome this — what else can be done if you want to continue? I didn't try "close-out", but then these commands were unused because at the time I didn't realise you can Poke things to Stream 9.

Over feeding the sound queue from interrupts has a higher priority than Break. I have never waited to see if this lock-up will time-out.

One other point: why did Amstrad place the transformer next to the green-screen VDU coils? Try removing it and see if Amstrad still regard 'gentle undulations' as a non-fault condition.

Do Amstrad think they have a loss leader or something? Apparently software up-dates are not available unless one pays out £20 a year.

Why is there still no modular version of the machine? That's nearly as bad as the Spectrum (£180 — hey look a joystick and printer port.)

H Williams
69 High Street
Brackley
Northants

Mutually dependent

As one of those unfortunate souls who try to scrape a living creating software masterpieces I spend a great deal of time criticising the computer press, usually in words of four letters.

As a method of relieving tension in times of stress, casting aspersions upon the intellect of reviewers takes a lot of beating.

However, recognising that we are mutually dependent I usually avoid making my views public. Indeed, my first excursions into the computing indus-

try were made via the typewriter rather than the computer keyboard, so I like to think I can see both sides of the many arguments.

But now *Popular Computing Weekly*, of all the mags on the shelves, has been the first to annoy me enough for me to wipe the cobwebs off the old typewriter and write a letter of complaint. Bad reviews I can take, after all any review is subjective and it is inevitable that some reviewers have bad taste.

No, what has really got my proverbial goal is your Readers' Chart. But, you might say, and indeed probably are, nearly every magazine has a readers chart. This is democracy in action. (Then why hasn't the government tried to abolish it?) What makes your chart different from all the others is the prize offered for predicting the Top 3 correctly. This will inevitably result in a large proportion of the votes being predictions rather than true expressions of opinion. As a result the best known names will tend to monopolise the top of the chart at the expense of the lesser known, and often better, programs. Surely no-one, except maybe the programmers of Daley Thompson's Decathlon, could pretend for a minute that this sort of 'chart' is good for the industry. You could be doing the same thing to games charts as the Radio One playlist has done for the music charts.

Nevertheless, like any good synchronised swimmer I refuse to let my smile fade and enclose three entries/votes for your competition/chart.



"Is that to be an MSX standard price?"

1) Predictions

- 1) Daley Thompson's Joystick Devastator (Spectrum) Ultimate
- 2) Underwuzle (Spectrum) Ultimate
- 3) Knight's Lore (Spectrum) Ultimate

2) What I would like to see

- 1) Sorcery (C64) Virgin Games
- 2) Strangeloop (Spectrum) Virgin Games
- 3) Falcon Patrol II (C64) Virgin Games

3) Genuine votes

- 1) Knight's Lore (Spectrum) Ultimate
- 2) Summer Games (C64) Epyx/Quicksilver
- 3) Sorcery (C64) Virgin Games (a little bias here I think)

(I was going to enclose a five pound note to encourage you to print this but I gave it to a barperson instead.)

Andy Wilson
Virgin Games
2 Vernon Yard
119 Portobello road
London W11

I can see your point, Andy, but it's one of those things where if you offer a prize people vote for what they think will win but if you don't not enough people vote to make the chart in any way meaningful.

No coverage

In response to AE Slad's letter (December 6 issue), I would like to say what a load of rubbish.

Could anybody tell me how the Dragon is superior to the BBC or QL?

I agree it is very upsetting when your micro is nearly dead through lack of press coverage so leading to little software, etc — I own both an Atom and a Memotech MTX 500.

But this leaves no excuse for slagging off perfectly good micros, without bothering to see how bad the Dragon is. Next time, THINK!

P Arkley
Accrington
Lancashire

Procedure name

I have found a problem concerning the Sinclair QL which I have not seen any correspondence about in the magazines and wonder if it is a peculiarity of my machine. I have a replacement JM version Rom.

When a procedure is defined, and then subsequently deleted from the program (or when its name is changed) in the course of program development, the procedure name is still remembered by the system, and any attempt to use the same name (for example, as a variable name) results in an error. Typing the name directly produces the same effect, but more seriously, in a proportion of cases the computer then locks up. This problem is resistant to the Clear command, though a New will restore order.

Removing redundant procedures is therefore very risky if they are subsequently called. The effect can be avoided by saving the program to micro-drive and then reloading it.

Hugh O'Neal
The Old Bakery
Lewes Road
Ringmer
E Sussex

Train shuffle

The thinking man's answer to falling leaves on the line,
for the BBC B or Electron, by Robert Hadden

In this colour graphics game with a difference, you have to create a safe path for a train and guide it through the stations, so it travels relentlessly on its way.

The track is divided into a square grid with one empty square. Just as in the plastic pocket games where you try to complete a picture, here you must move the track squares into the empty space to try and arrange one continuous length of track (it is even possible to move the square with the train on it).

When the train has visited all the red-coloured stations, you get a new random track pattern which is first larger, and then

more difficult -- the train moves faster, and there are more track corners than cross-roads.

Program Notes

The program has a main loop in Lines 20-90 which calls various procedures until all the stations are visited, or you have crashed.

Procsset -- draws the grid with a For/Next loop and sets the random track pattern into the array G(x,y). VDU 5 links the text to the graphics cursor.

Proctr(i) -- draws track pattern number i (from 1 to 10) by using Plot which draws triangles relative to (0,0). DX, DY, etc, are relative movements about the four corners of the track on the square.

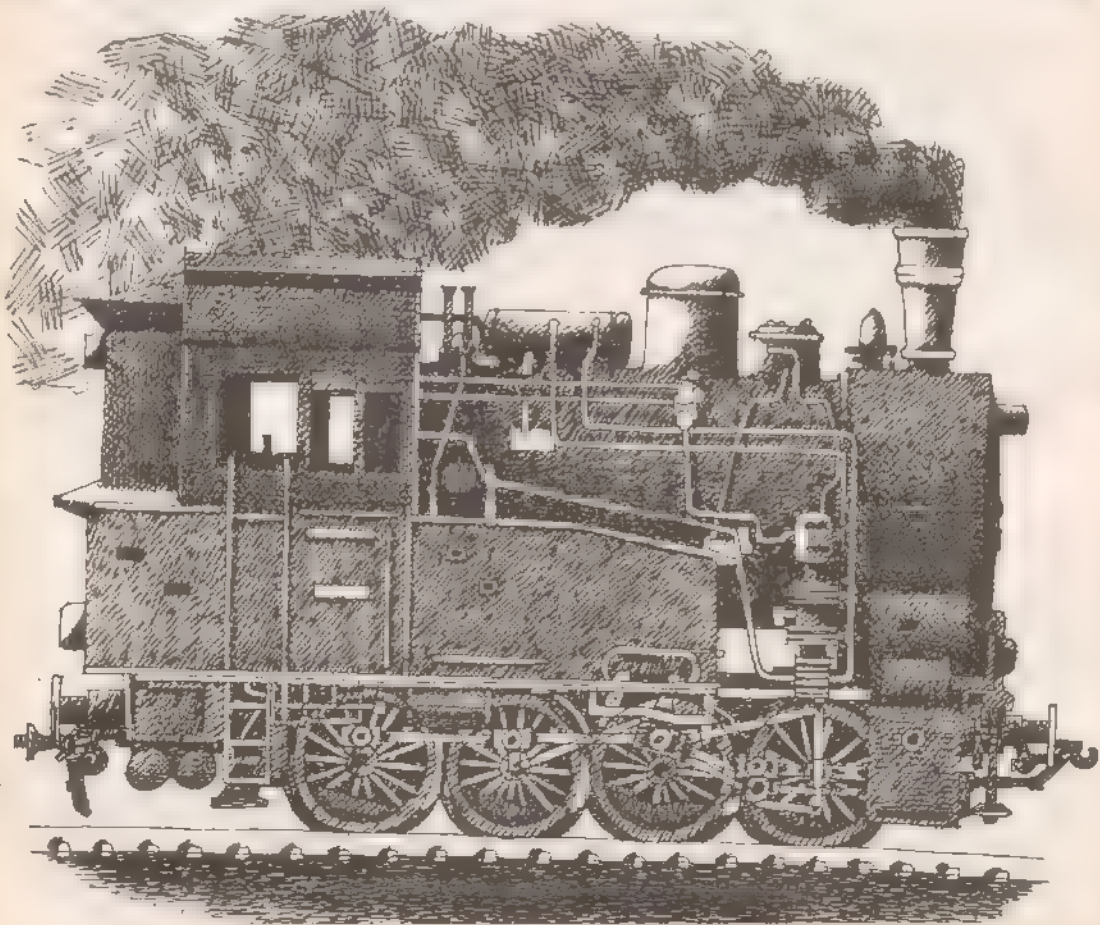
Procp -- prints engine at the point (x,y).

Procm -- moves the engine and checks the colour of the point it moves to by Point (x,y). Yellow or green (colours 0 to 3) indicate a crash, and red (colour 1) a station. When the engine reaches the edge of a square, it recalculates its direction of travel.

Procr -- turns the red track to black, and scores points.

Procmv -- tests the keyboard buffer with Inkey and adjusts the co-ordinates (i,j) of the blank square, which is swapped with one track square. If needed, the train is moved.

Procsq(x,y) fills in the square at the point specified.




```

10 MODE5:VDU19,0,2,0;19,3,3,0;19,2,0,0;VDU23,255,0,0,132,180,252,252,252,72;
DIMB(8,8)
20 S=0:L=4:SK=8:CHE=0:D=0:REPEAT
30 PROCSETUP
40 REPEAT
50 PROCMOVE
60 PROCEN
70 PROCMOVE
80 UNTILST=0ORD:UNTILD:SOUND1,-15,20,15:VDU4:PRINT"GAME OVER";
90 IFGET=32 GOTO200:FORQ=0
100 DEFPROCSETUP
110 L=L+1:IFL=8 L=5:SK=SK+2*(SK>1)
120 ST=2*INT(L/2):GCOL0,2:CLS:VDU4:COLOUR1:IFL<7 PRINTTAB(3,0)"TRAIN SHUFFLE"
PC(8)"by R.Hadden""A-up Z-down""<-left -right"
130 G=L*130+100:FORQ=100TO6 STEP130:MOVE100,0:DRAWQ,0:MOVEQ,100:DRAWQ,G:NEXT
140 FORI=1TO1:FORQJ=1TO1:IFQI=2ANDQJ=2 T=BEU:SET=RND(6+SK):IFT>10 REPEAT:T=T-S
K+4:UNTILT<11
150 G(QI,QJ)=T:PROCTR(6(QI,QJ)):NEXTQJ,QI
160 GCOL0,1:FORQ=0TO1:QI=(L+1)*Q:FORF=1TOINT(L/2):QJ=2*F-1:PROCTR(2-Q):G(QI,QJ)
)=2-Q:QJ=QJ+1:PROCTR(4-Q):G(QI,QJ)=4-Q:NEXTF,Q
170 A=2:B=2:T=G(A,B):T=L:J=L:GCOL0,3:PROCSQ(I,J):QI=I:QJ=J:PRINTTAB(0,30)"Score
":S:SS=0:YS=10:C=12:GCOL4,1:X=295:Y=235:VDU5:PROCPE
180 ENDPROC
190 DEFFNPOS(V):=(V+30)/32.5:MDD4
200 DEFPROCTR(T)
210 MOVE130*QI-30,130*QJ-30
220 IFT>4 GOTO270
230 IFT MDD2=1 DY=0:DX=80:DZ=30:DW=50:DV=0ELSEDY=130:DX=-50:DZ=-30:DW=80:DV=30
240 PLOT0,DY,DW:PLOT0,0,DZ
250 IFT<3 DY=DY+50:DZ=-30ELSEDY=DV-80:DX=DX-30:DZ=30
260 PLOTB1,DX,DY:PLOTB1,DZ,0:ENDPROC
270 IFT=9 PROCTR(1):PROCTR(4):ENDPROC
280 IFT=10 PROCTR(2):PROCTR(3):ENDPROC
290 IFT>5 PLOT0,50,0:PLOT0,0,130:PLOTB1,50,-130:PLOTB1,0,130:PLOT0,-80,-130
300 IFT=6 ENDPROC
310 PLOT0,0,50:PLOT0,130,0:PLOTB1,-130,50:PLOTB1,130,0:ENDPROC
320 DEFPROCPE:MOVEX=32,Y+16:VDU23:ENDPROC
330 DEFPROCEN
340 PROCPE:X=X+XB:Y=Y+YS:P=POINT(X,Y):IFF=0ORF=3 D=1
350 IFF=1 PROCST
360 C=C-1:IFC PROCPE:ENDPROC
370 QA=A:P=FNPOS(X):IFF=0ORF=0 P=(P-1.5)/1.5:X=X+P*10:A=A+P
380 QB=B:P=FNPOS(Y):IFF=0ORF=0 P=(P-1.5)/1.5:Y=Y+P*10:B=B+P
390 T=G(A,B):IFT<9ANDT/4 C=12ELSEC=6
400 XS=10*((A-QA)-(B-QB))*(T<5)*(T MOD5)+(A-QA)*(T<5)*(T MOD2=1)-(T>8)*(A-QA)
*(QB-B)*2*(9.5-T))
410 YS=10*((B-QB)-(B-QB))*(T<5)*(T<3)+(B-QB)*(T<5)*(T>2)-(T>8)*(B-QB)*(QA-A)*2*
(9.5-T)):PROCPE:ENDPROC
420 DEFPROCST:GOUND1,-15,60,3:PROCSQ(12-SK)*L*2:ST=ST-.5:GCOL0,2:G=FNPOS(X):
W=FNPOS(Y):T=(Q=0)*(YS/10-2)+(Q=3)*(YS/10-3)+(W=0)*(-XS/20-3.5)+(W=3)*(-XS/20-1.
5):QI=A:QJ=B:PROCTR(T):QI=1:QJ=3:GCOL4,0:ENDPROC
430 DEFPROCMOVE
440 G=INKEY0:IFG=65 J=J-(J<L)
450 IFG=90 J=J+(J>1)
460 IFG=44 I=I+(I>1)
470 IFG=46 I=I-(I<L)
480 IFA=1 ANDR=J A=A+QI-I:X=X+130*(QI-I):B=B+QJ-J:Y=Y+130*(QJ-J):CHE=1
490 IFOJ=J ANDOI=I FORPAUSE=1TO10+10*SK:NEXT:ENDPROC
500 GCOL0,3:PROCSQ(I,J):G(QI,QJ)=G(I,J):GCOL0,0:PROCSQ(QI,QJ):GCOL0,2:PROCTR(G
(QI,QJ)):IFCHE GCOL4,0:PROCPE:CHE=0
510 QI=I:QJ=J:GCOL4,0:ENDPROC
520 DEFPROCSQ(X,Y):MOVE130*X-22,130*Y-25:PLOT0,0,120:PLOTB1,114,-120:PLOTB1,0,
120:ENDPROC
530 DEFPROCSC(P):S=S+P:VDU4:PRINTTAB(6,30);S:VDU5:ENDPROC

```


Hardware Review

Colourful

Hardware Sakata SCP-800 Plotter
Micro General Price £206 Supplier
Statocom Distribution Ltd, 18 Grove Road, Sutton, Surrey.

Hardware Penman, Micro General
Price £250 (£229 until Feb. 1985).
Manufacturer Penman Products
Ltd, ■ Hazelwood Close, Dominion Way, Worthing, W. Sussex. Tel: (0903) 209081

This week we get a chance to review a couple of the more colourful new peripherals for home and business micros. Both offer multi-colour plotting of text and diagrams but achieve it in completely different ways. The Sakata plotter follows the proven format of a four-barrel printer head which moves horizontally across a sheet of paper whilst the paper is fed backwards and forwards to build up a diagram. The Penman takes the turtle concept so beloved of Logo users, adds technological sophistication and some built-in software to give a sort of robot drawing machine which scurries round a sheet of paper, drawing and writing as it goes.

About two years ago Tandy started selling a cheap four-colour printer using ball-pen technology and drawing on 114mm wide roll-paper. This printer would also work as a small plotter and, at around £170, attracted a lot of attention from technical users who could not afford conventional flat-bed plotters around at that time. Now the technology has been stretched still further ■ offer a general purpose plotter which can draw on paper or card, individual sheets of roll-feed, from post-card size to A4, in four colours and at a low price.

The plotter comes with Centronics and 8V serial ports, the serial port uses RS232 protocol hence BBC and Commodore ■ owners should be able to use this directly, if you can get hold of an appropriate cable. A full RS232 adaptor is available for those of you who can't get on with the low voltage job. When used as a printer the usual 96 ASCII characters are provided plus italic lettering, various special characters, and selectable international symbols such as the

UK pound sign. The print speed is much slower than that of a dedicated printer of comparable price as each letter is drawn out individually each time. One advantage over conventional printers is that you get full control of the print size. The smallest lettering comes out at 1.2mm high and you can get about 180 characters across an A4 page. The largest character print is roughly sixty times this size. Text can be printed horizontally, vertically, and even upside down.

Simple commands are used ■ control the printing and plotting process, with clear examples ■ explain each command. I soon found that I could control the output of the thing and felt quite confident that I could use it seriously. Small stepper-motors are used to drive the paper and pens, hence the lines produced can have small steps giving an image much like that of a high resolution screen display. For most applications this should not prove a problem.

And now for something completely different. The Penman plotter is certainly different, it may well get voted the executive toy of the year. It is much more than a toy, however, but I'm not quite sure just how much more. In principle, the Penman works much like a Logo turtle and can in fact be used in this role. There are three main parts ■ Penman, a power supply, control unit, and a motorised robot which can turn or move forwards and backwards. ■ plotting mode three pens are carried on the robot and software automatically controls the movements of the drive wheels ■ position the appropriate pen where required. Additional software ■ built-in to produce text (96 ASCII characters plus the UK pound), in sizes ranging from 1mm high ■ a whopping 127 mm high. Text can also be printed upwards, downwards, backwards, or forwards and slanted backwards or forwards giving an italic effect.

Paper size can go up to over A3. Larger plots can, in theory, be produced although they would have to be done in sections, moving the controller and robot between each section. A dark background is required for the paper as the robot uses the paper edge to align itself. It is possible to adjust the sensitivity of the edge-sensors ■ accomo-

date different paper and backing colours but this is not automatic. The plotting commands allow for straight lines or curves to be produced. Penman is very good at drawing circles.

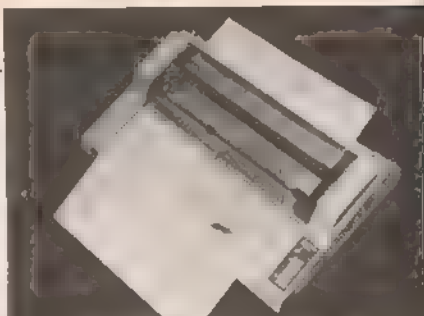
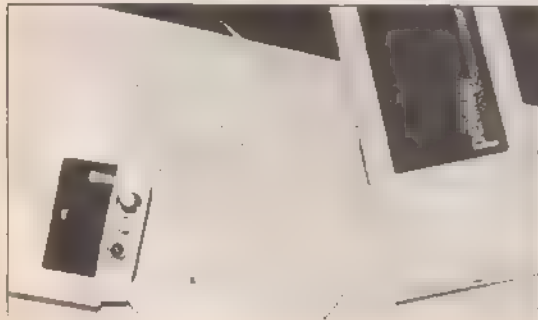
Penman ■ designed around a full bi-directional RS232 interface which

means that not only can you command the robot to move around and print, but you can also receive information from the Penman controller. It is possible ■ find out, from software, where the robot is, what direction it's pointing in, which pen is in use, and so on. This may not seem to be a whole lot of use at first sight but holds a key to possible future uses of the machine. It is possible, for instance, to use the Penman robot as a kind of mouse, move the robot about by hand and use software ■ work out what the movements have been. A software utilities disk, £29, is available for the BBC which uses the robot in this way (very crudely mind you) to select from the various example and software driver routines. The Penman appears to have been developed with the BBC very firmly in mind and is well suited to it. The disk utilities are for Basic and Logo, the Logo must be Acornsoft Logo on ROM. A connecting cable for the BBC costs £23, but you can make up your own quite easily.

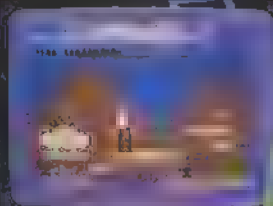
The utilities disk, which only works on BBC Version 2 Basic by the way, points to the main failing of the machine, although it uses relatively simple commands to control the plotting operation ■ really needs additional software before it can be used seriously. The robot is sensitive to any unevenness ■ the paper and slips easily on smooth paper, thus it tends to get out ■ alignment and must be reset periodically. I tried to plot a globe with lines of latitude and longitude and ended up with two half-globes and a number of disassociated lines, even after forcing a reset after plotting each component line. I think that it should be possible to produce quite high-accuracy plots but only through the use of some rather tricky software designed to overcome the hardware limitations. If you are not that worried about accuracy or have only simple plots to do then, after a bit of practice, you can get by using simple software.

All in all, if you want a simple reliable printer/plotter which does just what you tell it then go for the Sakata. If you are not fussy about getting results quickly or want to impress someone then the Penman may be just the job. The Penman may have a valuable role in education, leading from elementary line drawing to sophisticated multi-colour plotting using Logo or Basic. Meanwhile, I'm going to have another go at that globe before I have to give Penman back.

John Cochrane



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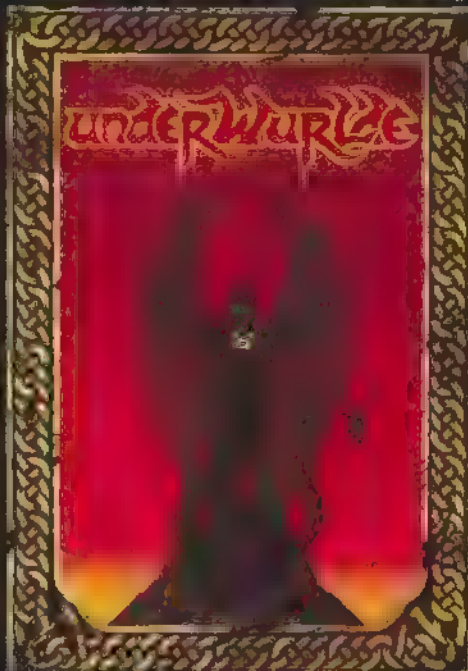


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48K SINCLAIR ZX SPECTRUM



COMMODORE 64



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Competition Result

ZX Spectrum + competition

A ZX Spectrum +, complete with Sinclair's Six-Pack, was up for grabs in the November competition run jointly by *Popular Computing Weekly* and Sinclair.

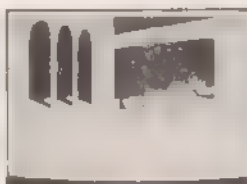
The winner was Liam Winer, of Padbury Close, Gatcombe Park, Hilsea, Portsmouth. Liam correctly identified each game shown in the TV advertisements and also sugges-

ted *The Legacy* as a suitable name for the new Sinclair game we described.

For those of you still foxed, the answers are below.



1. Learn to Read 3



2. The Hobbit



3. Castle Spellbound



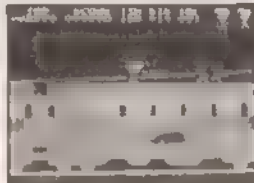
4. Flight Simulation



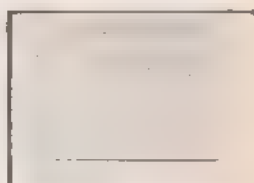
5. Match Point



6. Vu-3D



7. Stop the Express



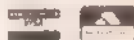
8. Tasword 2

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|----------------|---------|---------|
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| CANON PW1080A | £269.00 | £309.35 |

DAISY WHEEL

| | | |
|--------------|---------|---------|
| JUKI 6100 | £325.00 | £373.75 |
| BROTHER HR15 | £329.00 | £378.35 |
| EPSON DX100 | £356.00 | £409.40 |

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|-----------------|--------|--------|
| MIRACLE SYSTEMS | £32.50 | £37.37 |
| EPSON RS232 | £27.00 | £31.05 |

| | Ex VAT | Inc VAT |
|-------------|---------|---------|
| SINCLAIR QL | £234.00 | £384.10 |

MONITORS

| | | |
|------------|---------|---------|
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| CUB-653 | £220.00 | £253.00 |
| SANYO 80 | | |
| COLUMN | £70.00 | £80.50 |

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|----------------------|----------|
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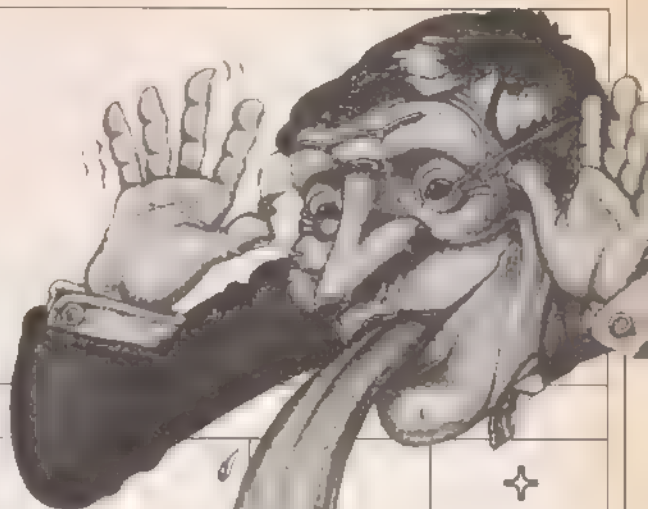
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| MONITOR SOCKET | | + | + | + |
| BUILT-IN "BASIC" | + | + | + | + |
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| REAL KEYBOARD | + | + | + | + |
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The Review

David Kelly looks at the last twelve months in a blow-by-blow review of the year

The micro industry always seems to pack so much into each year. In 1984, Sinclair tried to give us the QL for several months without success. Imagine's imagination proved to be bigger than its bank balance. Jack Tramiel, after making Commodore a \$1bn sales a year company, left and set Atari up in direct competition. A major blurr produced news of a new micro from Amstrad.

January: Sinclair announced a new 'professional' machine with an amazing 128K Ram and advanced 32-bit processor. Everybody got very excited about it and said that it made the Acorn BBC machine look a bit silly. The Coleco Adam which created such a stir - offering apparently exceptional value for money - in the US, finally made the leap across the pond. CRL announced it had tied up a deal to produce a game based on *War of the Worlds*. And Jack Tramiel - Commodore's founder - quite suddenly, without any apparent motivation, quit amid dark rumours of boardroom splits and amicable departures.

February: Commodore reacted to the QL launch by hinting at some wonderful new machines, including the Commodore 264, a successor for the C64, priced around £400 - coincidentally the same price as the QL. Dragon suffered another trauma and GEC agreed to step in and handle the company's marketing. The first pre-production MSX machines were unveiled to selected press representatives. Nobody could tell them apart and all the manuals were in Japanese. The MOD, in an unbridled fit of enthusiasm, attempted to stifle a chap in Barnsley who invented an apparently foolproof method of stopping computer piracy. People nodded sagely and said it was probably something to do with the MOD not wanting you to be able

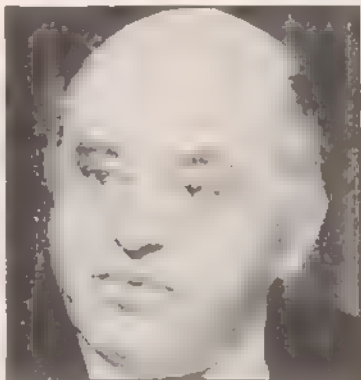
to stop the authorities from tapping your phone.

A curious interlude. Elan Computers, formally Samurai in its previous incarnation, moved into home economics, renaming itself Flan. Its £199 Flan Enterprise computer was planned to be in the shops in April. Sinclair's appreciation of the passage of time became distorted again (funny, just like when the Spectrum came out) and people began to ask questions like - When am I going to get my QL? The question of how Sinclair was choosing to invest the interest from money taken from around 12,000 unfulfilled orders came up. Sinclair failed to see what all the fuss was about.

March: Timex admitted defeat and withdrew from the US market. It was generally thought that if it hadn't spent the best part of a year adding a new case and cartridge port to the Spectrum, the TS2000 would have stood more of a chance. Sinclair stood its ground and steadfastly refused to send anybody their QLs they had ordered. Some grumbings were heard when it became clear that Sinclair intended to hang on to the interest from everyone's money. For the first time the intelligence of using Microdrives in the QL was questioned and software houses bemoaned the machine's lack of a cassette port. Some began to look favourably upon Amstrad's proposed machine.

Imagine got into a wrangle with Marshall Cavendish publishers and it became apparent that all was far from well at Tithebarn House. Acorn launched its 6502 BBC second processor. Flan decided its new name wasn't quite as it had first imagined. Flan became Enterprise.

April: Spring arrived. So did the Amstrad - lots of machines to play with at the launch and the company announced that the CPC464 will be in the shops in June. General reaction was favourable. Pictures of the new Commodore 264 are seen and the design of its case is much admired. A 16K machine was also mooted from Commodore, but neither was available for investigation. British Home Stores embarrassed Dragon considerably by selling off its remaining stocks of the Dragon 32 at £88. Questions



Jack Tramiel

were asked about the long term survival of Dragon Data.

The QL delay mystery is explained and people who had given their QLs up for lost made the alarming discovery that the first QLs that were to be sent out would be fitted with a built-in extra. This external Rom cartridge, Sinclair explained, contained a substantial chunk of the machine's Rom which it had failed to fit into the QLs original design. Sinclair tried to put a brave face on the whole episode - not entirely with success. Sinclair backed down on the issue of interest on money paid for computers not delivered - and offered an RS232 printer cable peace offering. It was not a good month for Sinclair. No sign of the Samurai/Elan/Flan/Enterprise.

May: The Advance IBM-compatible micro arrived in W H Smith and looked good value. The trusty ZX Printer was discontinued. Acorn's 280 second processor option for the BBC micro was announced. Dragon's troubles continued with speculation that Boots might follow BHS and drop the machine. Walls ice cream decided that a lolly called the Megabyte was a good idea. The first QLs, complete with value added extra 'dongle' went out, 16 weeks after they were ordered. MSX machines began to loom and the idea of a 'standard' was much ridiculed. Employees of Commodore in the US continued to leave at a great rate, following the departure from the company of Jack Tramiel, its founder, in January.

June: Dragons became became an endangered species. First the company announced it planned an MSX machine and then it called in the receiver. The company also contrived to show a new twin-disc version of the Dragon in the same week it went bust. Carnell Software also went through the hoop. Acorn discontinued its BBC A micro and Sinclair, disturbed by adverse press reaction to its QL, put a great deal of effort into persuading people otherwise. Commo-



Amstrad CPC464 micro

Of The Year



Sinclair's QL the first home micro to use the 68008 chip

dore decided that its 264 machine should from now on be referred to in polite company only as the Plus/4.

July: If June was bit dull, then July was not. Jack Tramiel reached into his back pocket and pulled out \$240m to buy Atari from Warners. Atari was busy losing \$800m per year at the time so Warners were quite keen to get shot of it. Lots of rumours floated around to the effect that Tramiel had been bored and had bought Atari to see if he could use it to knock out his old firm, Commodore.

Imagine suddenly turned belly-up and became insolvent amid ill-fighting, wheeling and dealing and recriminations, the like of which the industry had not before seen. Imagine always were good copy. This was some of their best. Dragon was sold off to Spain. Microdeal got caught up in a legal jungle when Activision claimed its *Cuthbert in the Jungle* was a *Pitfall* rip-off.

August: Tramiel acted fast and purged most of the staff from Atari UK. The 16K Spectrum faded gracefully from the scene. Bits and pieces of info began to crawl out of the woodwork about Acorn's range of business machines. It began to be obvious that MSX wasn't going to make the impact this year that its supporters had hoped - machines looked likely to still be in short supply at Christmas. The cash-flow problems struck again and Oric went out of its way to start rumours by announcing that its creditors were right behind it all the way.

We ran a great many stories about US Commodore 64 software houses tying up staggering deals with UK companies to distribute their sometimes mediocre, occasionally quite magnificent titles over here. Music and micros reared on the scene and the MIDI communications standard was

mentioned rather a lot. Compunet was announced and Oric tried unsuccessfully to sue its ad agency. Dragon software companies fled in droves to other micros.

September: Philips was reckoned by some to have acquired an MSX licence. Automata surprised every one by releasing a terminally weird program featuring Ian Dury and E P Thomson. Those waiting for a Samurai/Elan/Flan/Enterprise machine discovered that they would have to carry on waiting.

Acorn announced its ABC range of business micros. Some observers found the machine excessively bulky. Others thought there must be cheaper ways of achieving more or less the same thing. Oric claimed that Stratos was not a brand of after-shave.

The MSX manufacturers deemed it financially sound to drag a group of journalists off to the south of France for a gay day trip so they could miss the opening day of the *Personal Computer World Show*. The MSX machines turned out to be a smidgeon over-priced. By now, most people couldn't summon up much enthusiasm for the MSX spec.

October: Having failed in its attempt to sue its advertising agency, Oric thought it might as well have a hack at its distributor, Prism. More American Commodore 64 titles - yawn. We said Sinclair wouldn't launch a Spectrum in a new case with a better keyboard. Oric's major suppliers met and said the company was jolly good.

Commodore let slip that it plans a curious 128K machine that looks like a C64 and Plus/4 all rolled into one.

Ocean was not happy that news of its Frankie Goes to Hollywood game just slipped out. The deal still got signed. *Your Computer* scrapped its Christmas Show because it feared its exhibitors wouldn't make any money. Sinclair slipped out its Spectrum+ and some thought that there must be better ways of spending £50. Ocean

and Sinclair carved up the Imagine leftovers.

November: Mastertronic caught a cold - its *Chiller* soundtrack upset Michael Jackson who thought he'd heard it somewhere before. The QL finally got discs. People using microdrives looked pleased. QL software still on the endangered species list. Still more US C64 material - how much more could there be? Oric wished it to be common knowledge that it had a goodly number of new machines stuffed up its sleeve. Included were a IBM PC-compatible desk and lap-held models, together with the Stratos, which now had an IQ of 184. Coleco dithered and then decided that Cabbage Patch dolls were a better profit opportunity than computers.

Commodore and Atari continued to posture at one another and both announced 16-bit 68000-based machines for 1985. IBM took exception to the fact that the Advance ran most IBM software faster and cheaper. Discs for the Electron were announced and an up-market QL was planned by Sinclair for the New Year. Sinclair also reckoned that there might be some mileage in a portable version of the Spectrum.

December: Lots of people figured that lots of other people had broke into all sorts of electronic databases. BT was somewhat embarrassed. Tramiel continued his attack on his fellow manufacturers and slashed the price of the 800 XL machine.



Members of Imagine's team

Late December - the Enterprise looks likely to arrive just in time to miss Christmas. Acorn realised that it had bitten off more than it could chew with its American operation. Imagine employees all resurface - at Ocean, Beyond, Sinclair and Oric.

What about next year? 1985 looks set to be the year of the 16-bit micro. Commodore, Atari, and Acorn all look set to follow Sinclair's lead and produce advanced home micros. But we'll all have to wait and see.

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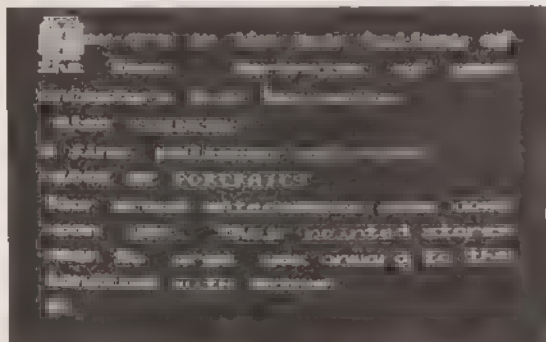
PCW1284

CREATIVE SPARKS



Role-play

Program *Tower of Despair*
Price £7.95 **Micro** Spectrum
48K **Supplier** Games Workshop,
■ Surbeam Rd, London
NW10.



That Games Workshop has been involved in fantasy role playing games since their invention comes through clearly in this, their first computer adventure game.

Whereas some programmers settle for single line place descriptions with shoddy graphics, *Tower of Despair* must be one of the most literate, atmospheric pieces of writing in the genre. This means that you are quickly drawn into the mood of the quest — in a forest you smell the pine, feel drowsy ... It's like playing Dungeons and Dragons with an exceptionally good Dungeon Master.

Tower of Despair also has the highest resolution graphics possible — printed ones! From time to time you are referred to pages in the accompanying booklet where you'll find suitably gothic illustrations.

The adventure is a Quilled one — but you'd never have guessed if Games Workshop

weren't so honest. The character set has been redesigned, with illuminated capitals and an archaic script, though this could be unclear if your TV isn't too good.

Most importantly, though, the adventure itself is exciting, calling for both logical thought and the involvement of real role playing — and as it's in two parts there's plenty to be drawn in by. This is a classic, despite the fact that it makes no great innovations. Instead it refines the traditional adventure to perfection.

John Minson



Roving Ram

Program *Magic Micro Mission*
Price £6.95 **Micro** Commodore
■ **Supplier** Quicksilver,
PO Box 6, Wimborne, Dorset.

Magic Micro Mission is based on the TV program of the same name. The game is in two parts, the first part being a pretty basic shoot 'em up. You have to destroy all six waves of the defending ships before you are allowed to land and go on to the next stage, which comprises a very simple maze. It is supposed to take place on a

circuit board inside the Magic Micro.

You have to remove all the faulty Rom chips on the board, while avoiding two patrolling Ram chips and a couple of resistors. Once you have completed your task, on one circuit board, you are moved on to the next.

The game is basically very simple, but despite this, quite tricky. Still, the straightforward action soon becomes rather repetitive and interest starts to wane. Both sound and graphics are likewise rather basic, although competent. An uninspiring package.

Richard Corfield



Pythonesque

Program *Arnold Goes To Somewhere Else* **Price** £5.50 **Micro** Amstrad CPC 464 **Supplier** Nemesis Software, 10 Carlow Road, Ringstead, Kettering, Northants.

One of the nicest things about the release of a new micro is that new, small companies that couldn't have possibly competed in the

crowded and cut-throat Spectrum/Commodore market, have a chance to make a name for themselves.

One such is Nemesis whose Arnold series of text adventures are like a breath of fresh air amongst the more usual, stolid and pedestrian fare. They are also very cheap.

Arnold Goes To Somewhere Else is the follow up to *The Trial Of Arnold Blackwood* (also available on the Dragon). It is on the whole not a difficult

continued over the page

Hot spot

Program *Macbeth* **Price** £14.95 **Micro** Commodore ■ **Supplier** Creative Sparks, 296 Farnborough Road, Farnborough, Hants.

From the brilliant opening graphics sequence, complete with thunder and lightening and genuinely spooky representation of the Three Weird Sisters on the blasted heath, you can tell that "Macbeth" is something special.

This four-adventure package started life as an unusual aid to getting to grips with the Shakespeare classic, but the result is a product which is a delight to play even if "O" Level English is a distant memory.

Bagpipe music (Scotland the Brave and Amazing Grace) helps to set the original scene

surely the best-written documentation for any computer game yet! — and the plot line follows the text closely.

Text input is highly sophisticated with a wide and, appropriately archaic vocabulary. Don't "kill" that menacing mercenary, "unseam" him.

Three of the adventures are text with graphics, one is the equivalent of an arcade game and the loving care used in all of them for graphics, sound effects and intelligent use of the story is unmistakable.

For the most part you're Macbeth, but in Game 2 you play Lady M, arranging the murder of your sovereign.

There's a psycho-analysis program after each phase, which can be both funny and illuminating, but watch out for the bill.

In case you haven't gathered, I loved this package and it is difficult to leave it alone.

Birmingham Wood appears to have come to Dunsinane and, unless I'm much mistaken,



which corresponds to the opening of the play itself. Incidentally, pleas for help on screen lead to hints on where to look in the edited version of the play, supplied with the game —

that's Macduff down the passageway with a very nasty look in his eye.

Barbara Conway



Reviews

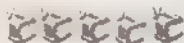
adventure, although I have become completely stuck at one point. Mainly because there are lots of location, their descriptions are more terse than I would like but what makes the program stand out is the imagination that has gone into its design. The scene of the adventure is the underworld, or the astral plains or...somewhere else. The locations read like a Dante-esque nightmare spiced with some quite erudite, mythological and mystical knowledge. However, just as you are getting used to this you are suddenly and completely wrong-footed by a burst of Monty Python humour or an awful groaner of a joke. I found it all immensely lively and

enjoyable.

The programming is similarly well thought out, responses are fast, you are allowed to 'take' items by just typing the object name and there is a very useful on-screen record of the last 10 or so moves you have made. Although there are no pictures the use of sound is the most original and atmospheric I have heard on a micro and greatly complements the feel of the game - I wish there was more of it.

Besides, the title is just wonderful! Says it all, really.

Tony Kendle



Program *Zim Sala Bim* **Price** £7.95 **Micro** Commodore ■ **Supplier** Melbourne House, Castle House, Castle Yard, Richmond, Surrey

This is a slightly unusual adventure for Melbourne House, which normally concentrates on intricate language parsers, plus varying degrees of graphics, for its programs.



But the attraction of *Zim Sala Bim* is mainly in the graphics and sound, with a very basic two-word instruction capability.

You take the title role, an Arabic Robin Hood character whose task is to break into the Sultan's palace and steal gold to buy food for his starving neighbours. Zim is the animated character on screen in a number of different scenes —

murder.

Zim Sala Bim is not for very advanced adventurers, but acolytes will enjoy it — particularly working out what to do with the treasure when you finally get it. The graphics are really the most interesting part of the program.

Barbara Conway



Monkey stuff

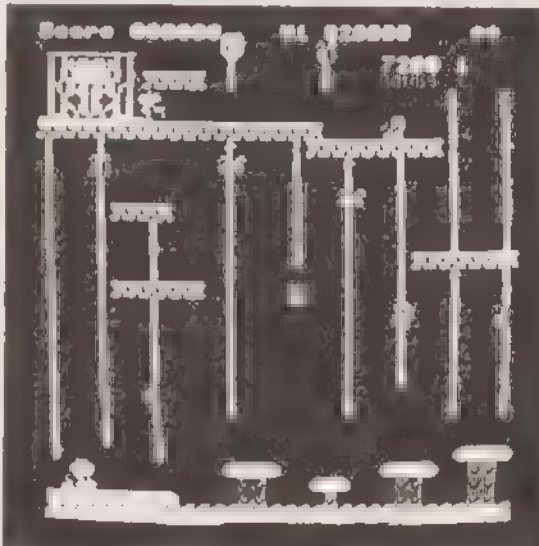
Program *Zany Kong Junior* **Price** £7.95 **Micro** BBCB **Supplier** Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX

Zany Kong, it seems, has been kidnapped by the evil Morris (not a very threatening name) and locked in a steel cage. You have to move Zany up and down vines

spikes. You can retaliate with apples and pineapples which can be dropped on to their heads.

The first screen is much more difficult than it looks, and the bonus runs out pretty quickly. Your monkey has to climb up and down — vines when they are close together. Snappers also run about on the vines and generally get in the way.

Once you reach the key Morris pushes Zany off the screen and the game moves up a level and obstacles grow.



to collect keys before a bonus figure reaches zero.

Baddies include snappers (like false teeth with handles) and Aardvark Birds which fly around and drop lethal electric

You'll need a lot of skill and the interest level remains pretty high even after a few plays.

Tara and Harriet Alabaster

Time traveller

Program *Space Pilot* **Price** £7.95 **Micro** BBCB **Supplier** Superior Software Ltd., Dept. C, Regent House, Skinner Lane, Leeds LS7 1AX

Like one of those tests where Captain Kirk has to prove his skill to some alien super being who controls the setting, time and action. Your first scenario is to command a fast-firing space ship which slips through the clouds seeking the enemy. You are returned to 1916 with biplanes dropping crude (but horribly effective!) bombs on

you.

Occasionally you can catch a falling pilot and you win a bonus 1000 points. Clear all the biplanes and shoot down the zeppelin then...whoosh! the screen wipes and the game-master alien throws you through a time-war to World War II where Spitfires are the enemy's disguise...and so on through the time zones.

The game is essentially asteroids in a new, colourful and exciting form. The action is fast with good animation and some shimmering clouds. It is also great fun!

Dave Watterson



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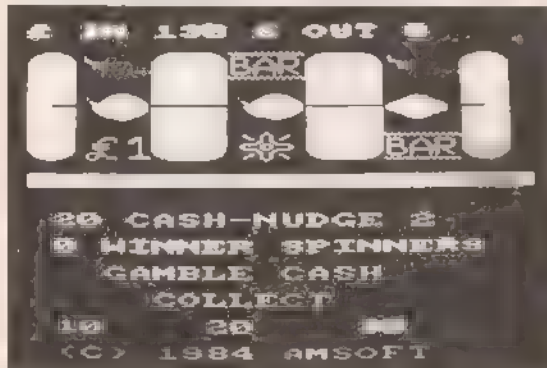
AUDIOGENIC LTD, P.O. BOX 88, READING, BERKS., ENGLAND. Tel: (0734) 664646

No cash

Program Fruit Machine Micro
Amstrad CPC464 Price £8.95
Supplier Amsoft, Brentwood
House, 169 Kings Road, Brent-
wood, Essex.

The popular pub money grabber, the fruit machine, has been translated for the Amstrad, obviously losing in the process much of its appeal — the actual winning of money.

The object of the game is



simple, make as much profit as possible from an imaginary £5 stake, and hopefully making the high score table of successful gamblers.

Pressing space sets the reels

in motion, and if you are lucky they will come to rest on a combination. Then you can either collect your winnings or gamble and often lose them.

Other alternatives include 'nudges,' trying to increase your win by moving the reels into a better position. If you have won over 50p, you can try something called the 'Winner Spinner' feature.

Home micro Fruit Machine games are getting almost as difficult to figure out as their real 'pub' counterparts.

In the end the experience

remains hollow though, because the program won't cough up proper cash when you win.

Greg Pearson



Reborn

Program Pitfall II: Lost Caverns Price £8.99 Micro Spectrum 48K
Supplier Activision (UK) Inc., 15 Harley House, Marylebone Road, London NW1 5HE

Among all the Willys, Wilfs and Wallys this could be just another Tom, Dick or in this case Pitfall Harry making his Spectrum debut.

There's a lot of Indiana Jones about our hero as he runs, climbs, jumps, swims and even hitches lifts on passing balloons in the 'Lost Caverns' — really a series of platforms forming a vertical maze, inevitably filled with deadly creatures.

The caverns are extremely large though and mapping them, aided by a Hold key, is vital if you're to develop a strategy. It's not merely a ques-

tion of finding your way as the game treats loss of life in a fresh fashion.

You gain points for various discoveries, plus gold collected en route, and you also pass magical healing places, marked by crosses. Make a fatal contact and your ghost returns to the last one of these touched to be re-born, points draining away all the while. It pays never to be too far from a cross, therefore.

Harry is amusingly energetic and the strategy elements are challenging, but there appears to be a bug when using the balloons which necessitates a complete re-load. It's a pity because despite small characters and a general lack of sophistication, I found it all quite addictive, though somewhat overpriced.

John Minson



Shoot-out

Game Black Hawk Price £7.95
Micro Commodore Supplier 296 Farnborough Road, Farnborough, Hampshire.

A game for separating the men from the boys which involves both action and strategic skills. As commander of the Black Hawk, the most advanced strike-aircraft yet created, your task is to fly to a distant group of islands and destroy the enemy airfield. On the way, you can expect some opposition from fighter planes, helicopters, missiles and tanks.

To succeed at Black Hawk, you need to master two operating modes. In the attack mode, the plane's onboard computer helps you launch missiles at

enemy installations including anti-aircraft guns, missile launch-pads and command posts. A switch to the defence mode involves you in a straightforward shoot-out with any enemy forces that managed to survive your attack wave.

Various goodies can be collected on the way: double cannons, blizzards, etc, but be warned — any fall-off in the pilot's ratio of bombs on target and they will be taken away. It's enough to make grown men weep. Although the scoring is somewhat complex, Black Hawk is attractively packaged, and the eight-page instruction booklet is easy to follow. A lesson for other games manufacturers.

Tom Hussey



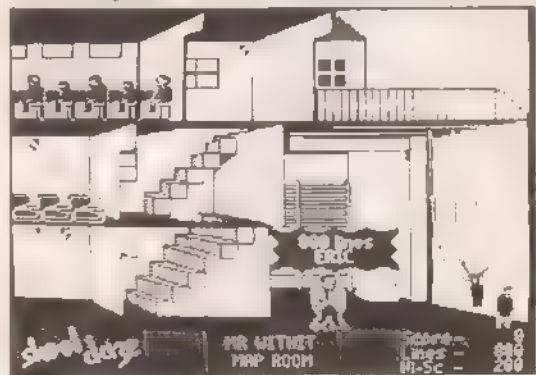
Anarchic

Program Skooldaze Price
£8.95 Micro Spectrum 48K
Supplier Microsphere Computer Services Ltd., Rosebery Avenue, London N10 2LA

If the Bash Street Kids went to Grange Hill then were reduced in size and placed in a microchip, the result could

teachers and avoiding being given lines, that it suffices to say you won't succeed without a lot of experimentation.

Skooldaze is so pleasing because of its attention to detail. Not only does the day divide up into various lessons — and woe betide if you're caught out of class — but the staff and pupils have their own individual characters, ask educational questions and make fatuous comments via speech bubbles.



be Skooldaze. That is the only way to describe this wild, anarchic, hilarious game.

The screen is a window into this seat of learning (learning?) and centre stage stands Eric, who has to retrieve his report from the headmaster's safe or face a fate worse than the cane. The method of saving his skin is so unlikely, involving flashing school shields, antique

short it's just like real school life... and you can even personalise it by renaming the cast!

The options available range from writing on blackboards to firing catapults, so it's not an easy game to play, but it's quite unique, totally endearing and unlike Eric, this gets top marks.

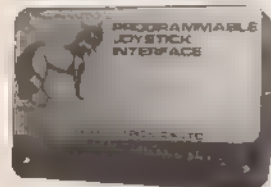
John Minson





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Sleigh ride

Festive fun for any Spectrum from the pen of **Peter Millar**

Here is a short program that is guaranteed to break the ice at your Christmas party. It prints a graphic of Santa Claus riding across the rooftops, then plays

Jingle Bells, after which 'Merry Christmas' is flashed up on the screen. Put it up, then watch your TV and Spectrum go flying out of the window after 10 minutes.

Program Notes

- 15-30 User Defined Graphics
- 30-95 Sets up screen and movement
- 100-135 Plays tune
- 140-165 Flashes up message
- 160-265 UDG data

```

5 REM SANTA © P MILLAR
10 PAPER 1: BORDER 1: CLS
15 REM USER DEFINED GRAPHICS
20 FOR i=1 TO 21
25 FOR a=0 TO 7: READ X: POKE
USR CHR$(i+143)+a,X: NEXT a
30 NEXT i
35 REM SET UP SCENE
40 INK 0: PRINT AT 15,0;"
45 PRINT AT 18,0;"
50 PRINT AT 17,0;"

```

```

55 FOR t=1 TO 10
60 INK 6: CIRCLE 210,140,t: NE
XT t
65 LET h=255: FOR v=104 TO 175
PLOT (RND*h),v: NEXT v
70 LET a=1
72 REM ENTER NEXT GROUP OF LET
TERS IN GRAPHICS MODE
75 INK 2: FOR y=1 TO 19: PRINT
AT 9,y;" AB
TCFIJIIIIIIK
TGC T QNML
TEH T P R
UUUUUUU ■ S

```

```

80 LET a=a+1
85 IF a=50 THEN GO TO 140
90 PAUSE 10: NEXT y
95 INK 0
100 REM TUNE
105 BEEP .25,6.5: BEEP .25,6.5:
BEEP .4,6.5: PAUSE 7
110 BEEP .25,6.5: BEEP .25,6.5:
BEEP .4,6.5: PAUSE 7
115 BEEP .2,6.5: BEEP .25,9.5:
BEEP .3,2.5: BEEP .3,4.5: BEEP .
35,6.5: PAUSE 10
120 BEEP .3,7.5: BEEP .3,7.5: B
EEP .4,7.5: PAUSE 1: BEEP .2,7.5
P BEEP .25,7.5: BEEP .3,6.5: BEE
P .13,6.5
125 PAUSE 10: BEEP .2,6.5: BEEP
.2,6.5: BEEP .4,6.5: BEEP .4,4.
5: PAUSE 1: BEEP .25,4.5: BEEP .

```

```

4,6.5: PAUSE 1: BEEP .55,4.5
130 PAUSE 20: BEEP .65,9.5
135 GO TO 75
140 FLASH 1: INK 6: CLS: PRINT
AT 4,1;"
145 FLASH 1: PRINT AT 12,4;"

```

```

150 PAUSE 250
155 FLASH 0: INK 0: CLS: GO TO
40
160 REM UDG DATA
165 DATA 0,0,0,1,99,246,252,95
170 DATA 60,254,250,255,254,254
,124,60
175 DATA 60,126,255,255,255,255
,255,255
180 DATA 255,255,255,255,255,12
7,63,31
185 DATA 0,126,126,126,126,126,
126,0
190 DATA 0,0,0,126,224,248,30,7
195 DATA 0,0,0,0,232,252,252
200 DATA 12,12,12,12,12,15,15,0
205 DATA 0,0,0,0,0,0,255
210 DATA 0,0,0,0,7,4,4,255
215 DATA 33,101,63,8,24,0,126,
255
220 DATA 255,255,224,192,192,12
6,126,0
225 DATA 1,3,7,255,255,255,255,
255
230 DATA 0,0,0,255,255,255,255,
255
235 DATA 0,0,0,63,127,255,255,2
55
240 DATA 255,255,255,127,63,31,
13,17
245 DATA 54,108,54,25,9,0,0,0
250 DATA 255,255,255,255,255,10
0,54,54
255 DATA 54,54,108,216,144,0,0,
0
260 DATA 4,4,4,4,4,4,4,4
265 DATA 255,0,0,0,255,0,0,0
300 SAVE "santa" LINE 5

```


Everything in its place

Part two of Brian Cadge's graphics command program for the CPC 464

This week we finish off with the rest of the assembler listing and some more detail about the workings of the program itself.

The **! Place** command simply replaces a previously stored image at the character position given. The coordinates, *xpos* and *ypos* are as used by the **Locate** command, the program automatically takes into account the current mode.

These commands are fairly idiot proof — you cannot display an image which has not yet been defined. However, take care to keep *Himem* right, as defining more images than you have reserved space for could cause Basic to be corrupted.

The advantages of using these new

commands over using normal UDC characters is that they can be different shapes and can contain as many colours as the mode allows. They also operate a lot faster than using **Print**, which is useful in fast games.

Moving on to the workings of the program. The program begins by defining the new commands, done by setting up the registers and making a call to the Firmware at **\$BCD1** which logs an **RSX** onto the operating system.

When a command is encountered, control is passed to the routine via the jump table. The **A** register then contains the number of parameters passed in the command, and **IX** points to the last parameter, **IX+2** points to the last but one and so on.

The **IV** register is undefined when the **RSX** is in Ram.

Two other Rom routines are used. The first is at **\$BC1A** which returns the screen Ram address of the character position given in **HL** (**H**=column, **L**=row), top left of the screen at position (0,0). This is needed as hardware scrolling used on the Amstrad means that the screen doesn't always start in the same place. The other routine used is at **\$BC26**, which returns the address in **HL** of the screen byte which is displayed below the current one addressed by **HL**. This is needed for the same reason as above.

To get the program going on your machine, type in the Basic loader program and **Save**, then **Run** it. If all goes well you should get **Ready**, and you can now **New** the program and load or type in a program to use the new commands.

It is interesting to note that there is one built in **RSX** command — try typing **! BASIC**.

| | | | | | | | | | |
|------|----------|-----|--------|-----------------|----------|----------|------|--------|-----------------|
| A718 | 22CEA7 | 458 | LD | (VDU),HL | A77D | 41 | 1888 | LD | B,C |
| A71E | CD72A7 | 460 | CALL | FETCH | A77E | C3 | 1810 | PUSH | BC |
| A721 | C9 | 470 | RET | | A77F | E5 | 1820 | PUSH | HL |
| A722 | DD4604 | 480 | PLACE | LD | B,(IX+4) | | | | |
| A725 | 84 | 490 | INC | B | A780 | ED4ED0A7 | 1838 | LD | BC,(HDL) |
| A726 | FE03 | 500 | CP | 3 | A784 | 41 | 1840 | LD | B,C |
| A728 | 20F7 | 510 | JR | NZ,EXIT | A785 | CD62A7 | 1850 | CALL | GETCHR |
| A72A | 21C0A7 | 520 | LD | HL,STACK | A788 | 23 | 1860 | INC | HL |
| A72D | CD33A7 | 530 | CALL | GETADR | A789 | 18FA | 1870 | DJNZ | HLOP |
| A730 | 1A | 540 | LD | A,(DE) | A78B | E1 | 1880 | POP | HL |
| A731 | 32D0A7 | 550 | LD | (HDL),A | A78C | CD4A7 | 1890 | CALL | DOWNB |
| A734 | 1B | 560 | DEC | DE | A78F | C1 | 1108 | POP | BC |
| | | | | | A798 | 18EC | 1118 | DJNZ | VLOP |
| | | | | | A792 | C9 | 1128 | RET | |
| | | | | | | | 1138 | | |
| A735 | 1A | 570 | LD | A,(DE) | A793 | C5 | 1140 | PUTCHR | PUSH BC |
| A736 | 32E1A7 | 580 | LD | (VERL),A | A794 | E5 | 1150 | PUSH | HL |
| A739 | 1B | 590 | DEC | DE | A795 | 0680 | 1160 | LD | B,B |
| A73A | 84 | 600 | LD | A,(DE) | A797 | 1A | 1170 | LD | A,(DE) |
| A73B | FE55 | 610 | CP | B5 | A798 | 77 | 1180 | LD | (HL),A |
| A73D | 20E2 | 620 | JR | NZ,EXIT | A799 | 7C | 1190 | LD | A,H |
| A73F | DD7E02 | 630 | LD | A,(IX+2) | A79A | C68E | 1200 | ADD | A,B |
| A742 | 30 | 640 | DEC | A | A79C | 67 | 1210 | LD | H,A |
| A743 | 67 | 650 | LD | H,A | A79D | 13 | 1220 | INC | DE |
| A744 | DD7E08 | 660 | LD | A,(IX+8) | A79E | 18F7 | 1230 | DJNZ | PLOP |
| A747 | 30 | 670 | DEC | A | A7A0 | E1 | 1240 | POP | HL |
| A748 | 6F | 680 | LD | L,A | A7A1 | C1 | 1250 | POP | BC |
| A749 | CD1ABC | 690 | CALL | #BC1A | A7A2 | C9 | 1260 | RET | |
| A74C | 22CEA7 | 700 | LD | (VDU),HL | | | 1270 | | |
| A74F | CD33A7 | 710 | CALL | RESTOR | A7A3 | ED5BCCA7 | 1280 | RESTOR | LD DE,(STORAGE) |
| A752 | C9 | 720 | RET | | A7A7 | 2ACEA7 | 1290 | LD | HL,(VDU) |
| A753 | 25 | 730 | GETADR | DEC | A7AA | ED4BD1A7 | 1300 | LD | BC,(VERL) |
| A754 | 18FD | 740 | DJNZ | GETADR | A7AE | 41 | 1310 | LD | B,C |
| A756 | 54 | 750 | LD | D,H | A7AF | C5 | 1320 | PVLOP | PUSH BC |
| A757 | 5D | 760 | LD | E,L | A7B0 | E5 | 1330 | PUSH | HL |
| A758 | 01F0B8 | 770 | LD | BC,240 | A7B1 | ED4BD0A7 | 1340 | LD | BC,(HDL) |
| A75B | 37 | 780 | SCF | HL,BC | A7B5 | 41 | 1350 | LD | B,C |
| A75C | ED42 | 790 | SBC | HL,BC | A7B6 | CD93A7 | 1360 | CALL | PUTCHR |
| A75E | 22CEA7 | 800 | LD | (STORAGE),HL | A7B9 | 23 | 1370 | INC | HL |
| A761 | C9 | 810 | RET | | A7BA | 18FA | 1380 | DJNZ | PHLOP |
| | | | | | A7BC | E1 | 1390 | POP | HL |
| A762 | C5 | 830 | GETCHR | PUSH BC | A7BD | CD4A7 | 1400 | CALL | DOWNB |
| A763 | E5 | 840 | PUSH | HL | A7C0 | C1 | 1410 | POP | BC |
| A764 | 8608 | 850 | LD | B,B | A7C3 | C9 | 1430 | RET | |
| A766 | 7E | 860 | GLOOP | LD A,(HL) | | | 1440 | | |
| A767 | 12 | 870 | LD | (DE),A | A7C4 | 8608 | 1450 | DOWNB | LD B,B |
| A768 | 7C | 880 | LD | A,H | A7C6 | CD26BC | 1460 | DWLP | CALL #BC26 |
| A769 | CD680 | 890 | ADD | A,B | A7C9 | 18FB | 1470 | DJNZ | DWLP |
| A76B | 67 | 900 | LD | H,A | A7CB | C9 | 1480 | RET | |
| A76C | 13 | 910 | INC | DE | | | 1490 | | |
| A76D | 18F7 | 920 | DJNZ | GLOOP | A7CC | | 1500 | STORAG | DEFS 2 |
| A76F | E1 | 930 | POP | HL | A7CE | | 1510 | VDU | DEFS 2 |
| A770 | C1 | 940 | POP | BC | A7D0 | | 1520 | HDL | DEFS 1 |
| A771 | C9 | 950 | RET | | A7D1 | | 1530 | VERL | DEFS 1 |
| | | | | | A7D2 | | 1540 | OSUF | DEFS 4 |
| A772 | ED5BCCA7 | 970 | FETCH | LD DE,(STORAGE) | | | | | |
| A776 | 2ACEA7 | 980 | LD | HL,(VDU) | | | | | |
| A779 | ED4BD1A7 | 990 | LD | BC,(VERL) | | | | | |

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The Popular Vote

Biased? Opinionated? Unfair? Indulgent? Irrelevant? Cruel? All than and more, the Popular Team mumble on incoherently about the programs they loved and hated in the past year.



Graham Taylor
— Features

The least worst best collection

Tir na Nog (Spectrum, Gargoyle)
Award for best animated hair in any adventure game.

Ghostbusters (Commodore 64, Activision)

Game I'd play even if I didn't have a TV picture award.

Caesar's Travels (Commodore 64, Mirrorsoft)

Ah, gurgie, gurgie, diddums award for round niceness.

Elite (BBC, Acornsoft)

Well, I didn't say there weren't any good games on the BBC award.

Knight Lore (Spectrum, Ultimate)

Best reason to give up trying to learn machine code programming in despair award for effortless superiority.

Deus Ex Machina (Spectrum, Automata)

Program most likely to be reported in the

drugs squad award.

Deus Ex Machina (again)

Program that features the most comedy stars who have also appeared in Carry On films.

War of the Worlds (Spectrum, CRL)
Most rolling about with mirth award for being really terrible.

Tony Crowther

The Ulysses award for homelessness and the 'which company did you say you were from?' special PR persons award.

Strip Poker (Commodore 64, US Gold)

Most ludicrous emotion to try to evoke with a computer program award.

Raid over Moscow (Commodore 64, US Gold)

The fluoride in the drinking water award for loony night-wing paranoia.

Impossible Mission (Commodore 64, CBS)

Donald Sinden award for overacting from a computer program for the rendition of 'kill him my robots' at various points in the game.

Psytrax (Spectrum, The Edge)

Samuel Beckett 'life is just the same thing over and over again without getting any better' award for having thousands of screens all almost exactly the same.

QL Chess (QL, Psion)

It may take 27 attempts before it will load, but it's worth it award.

Chiller (Commodore 64, Mastertronic)

George Harrison My Sweet Lord most obvious copyright infringement award for the music.

understand.

5 Ghostbusters (Commodore 64, Activision)

I still can't believe that my weedy little Commodore 64 is producing that incredible music and speech synthesis. Friends and flatmates are all amazed, and have great fun pressing the space bar at inappropriate moments. The game? What game?

4 Football Manager (all main micros, Addictive Games)

Well, all right, it's hardly a game of 1984, but still about the best use I can think of for a home computer. How else are Crystal Palace ever going to make the first division?

3 Trashman (Spectrum, New Generation)

Puts the romance back into bins.

2 Summer Games (Commodore 64, Epyx/Quicksilver)

One of the most realistic of Track and Field type games, especially as success doesn't depend on thrashing the joystick into an early grave. Wonderful graphics and some rather nice sound effects — specially when



David Kelly —
Editor

1 Knight Lore (Spectrum, Ultimate) In my view the cleverest program of the year with tremendous 3D graphics. The visual puzzles are wonderful and the lead character's periodic transformations appear quite disconcerting.

2 Trashman (Spectrum, New Generation) It may look a bit dated now, but at the time I liked it very much. Unusual plot, clever graphics and it is not at all as easy as it looks.

3 Witches Cauldron (Spectrum, Mikro-Gen) I'm not quite sure what's happened to Mikro-Gen, but they've suddenly started producing some good stuff — Pyjamarama was good, but the graphics in this adventure are very colourful and neat. Besides, I always wanted to be a frog.

4 Dallas Quest (Commodore 64, Data-soft via US Gold) Very silly adventure. Sue Ellen hires you as the best detective in Texas. I tried to shoot the cat and a flag appeared from the gun which said 'bang'.

5 Flip & Flop (Commodore 64, State-soft) Much more interesting than Q-bert, this confusing topsy-turvy platform game is

gymnasts land flat on their backs, for some reason.

1 Sherlock (Commodore 64, Melbourne House)

There is something enormously refreshing about the lack of rocky/desolate/wooded/mystical landscapes littered with swords/gems/keys or even toy robots in Sherlock. Furthermore, you get a rattling good yarn with plenty of atmosphere and frustration and enlightenment in about equal measures.

Dodo of the Year

War of the Worlds (CRL)

Great idea — but the implementation of the theme tune on the Spectrum was laughable and all those reams of text at the beginning were so tedious. And, as far as I'm concerned, the idea of rescuing "Carrie — the girl you love" was implausible, to say the least.



Christina
Enkine — News

Some games I've enjoyed. In reverse order.

7 Caesar the Cat (Commodore 64, Mirrorsoft)

I don't know why I find Caesar the most endearing computer sprite I've ever come across. I don't even like cats that much.

6 Fantasia Diamond (Spectrum, Hewson Consultants)

Fairly sophisticated, fun, and moderately interactive graphics and text adventure. Though how it took me a week to realise that Put battery into toy robot was more acceptable than Galvanise robot, Insert battery, Energise toy robot, etc, I never

The Popular Vote

quite deceiving. Its designer was an architect and it's not easy. Very frustrating.

6 Yacht Race (Spectrum, Hill-MacGibbon) Hill-MacGibbon has produced a number of excellent simulations, this one dinghy sailing. I tried sailing for the first time quite recently and discovered I was pretty useless. This program proved to be quite useful (unfortunately that was after the event).

7 Ghostbusters (Commodore 64, Activision) OK, OK. So the gameplay may not be hot, but the music is, well, marvellous. Must be the catchiest tune of the year.

Dodo of the Year

There was unprecedented competition this year for the most spectacular program 'dodo' for the 12 months — my picks would be *Revenge of the Killer Tomatoes* from Visions (great title, shame about the game) and the official version of *Pac-Man* from Atari who at one point reckoned that people would cough up £14.99 for the Spectrum version of a game they had a thousand versions of already.



John Cook —
Software

What games will I be playing this Christmas, assuming I can: a) avoid clogging the joystick up with sugar from the mince pies, and b) prevent myself from an unfortunate overindulgence of a certain branded Ginger Wine?

Elite (Acornsoft, BBC B) comes top of the pile by at least a mile and a half. None of this 'goodwill to all Thargoids' rubbish in the Cook household, I can tell you. Easily the best game this year. When you come down from that adrenalin high, the next best thing you could do is lie back, turn down the lights, turn up the music and tune into the collective unconscious with **Psychodelia (Llamasoft, C64, Vic, C16)**.

More family fun after the Queen's Speech

with **Ghostbusters (Activision, CBM64, Spectrum)**. Play the game, see the film, wear the T-shirt, eat the book.

Something to put up on Christmas morning; **Impossible Mission (Epyx, CBM64)**. The realistic screams of the hero dying yet another painful death should have the whole family awake in no time.

For Boxing Day, when you are bloated through excessive consumption, less energetic and more intellectual stimulation is required. Try **Tir Na Nog (Gargoyle, Spectrum)**, and let Cuchulainn do the walking for you in this Celtic adventure. It looks pretty, too!

Drebbles (US Gold, CBM64) may provide welcome relief from alien zapping, as you hop across the atomic grid and through the dark corridor to free your Drebbish brethren. This is a game as quirky and delightful as **Splat (Incentive Software, Spectrum)** with, I suspect, an appeal as long lasting.

Finally, if you've been very, very good; eaten your greens, helped old ladies across the road, etc, you might just find a Defender machine in your stocking. But if you've been bad, it's 'Mutant Martha meets, mashes and mutilates the Maric Muffins' for you, m'lud.

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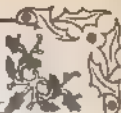
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POPULAR COMPUTING WEEKLY



In the deep mid-winter

Another seasonal offering for the BBC B written by
Philip Woodley

Here is a program that can be put up on the computer just after Christmas dinner, in between opening the presents and the Queen's speech.

It draws an appropriate wintery scene in Mode 2, and plays some Christmassy music. The music can be repeated afterwards by pressing any key. Happy Christmas!

Program Notes

Procchurch -- Draws church
Proctrees -- Draws the trees
Procsetup -- Defines the VDU 33 characters
Procmusic -- Plays the music

```

10 ON ERROR RUN
20 MODE 2
30 FOR S=1 TO 250
40 GCOL 0,8:X=RND(1280):Y=RND(1024)
50 PLOT 69,X,Y:NEXT
60 FOR S=1 TO 250
70 GCOL 0,15:X=RND(1280):Y=RND(1024)
80 PLOT 69,X,Y:NEXT
90 PROCSETUP:PROCTREES
100 GCOL 0,7
110 MOVE 0,200:DRAW850,0
120 PLOT 85,0,0
130 MOVE 850,0:DRAW 1280,150
140 PLOT 85,1280,0
150 MOVE 400,100:DRAW 1200,100
160 PLOT 85,850,0
170 COLOUR 3:PRINTTAB(10,4)CHR$237
180 PRINTTAB(10,5)CHR$238;CHR$239
190 PRINTTAB(10,6)CHR$240
200 PRINTTAB(9,3)"\";TAB(9,6)"/"
210 PRINTTAB(12,3)"/";TAB(12,6)"\"
220 COLOUR 5:PRINTTAB(5,13)"MERRY
    XMAS":COLOUR3
230 VDU 23;820;0;0;0;0;
240 PROCCHURCH
250 PROCMUSIC:END
260 G=GET:PROC MUSIC
270 DEFPROCSETUP
280 VDU 23,230,24,24,24,24,24,24,2
290 VDU 23,231,24,60,126,255,255,
    255,255,255
300 VDU 23,232,255,255,255,255,255,
    255,255,255
310 VDU 23,233,0,0,0,0,1,3,0,1
320 VDU 23,234,3,7,15,1,3,7,15,31
330 VDU 23,235,0,0,0,0,128,192,0,128
340 VDU 23,237,0,0,0,0,1,1,1,1
350 VDU 23,238,1,2,28,120,24,4,7,3
360 VDU 23,239,0,128,112,60,48,64,
    128,0
370 VDU 23,240,3,3,3,3,0,0,0,0
380 VDU 23,236,192,224,240,128,192,
    224,240,248
390 ENDPROC
400 DEFPROCTREES
410 COLOUR 1:PRINTTAB(3,25)CHR$230
420 PRINTTAB(3,26)CHR$230
430 PRINTTAB(3,27)CHR$230
440 COLOUR 2:PRINTTAB(3,24)CHR$232
450 PRINTTAB(3,23)CHR$231
460 PRINTTAB(2,23)CHR$233
470 PRINTTAB(2,24)CHR$234
480 PRINTTAB(4,24)CHR$236
490 PRINTTAB(4,23)CHR$235
500 COLOUR 1:PRINTTAB(7,27)CHR$230
510 PRINTTAB(7,28)CHR$230
520 COLOUR 2
530 PRINTTAB(7,25)CHR$231
540 PRINTTAB(7,26)CHR$232
550 PRINTTAB(6,25)CHR$233
560 PRINTTAB(6,26)CHR$234
570 PRINTTAB(8,26)CHR$236
580 PRINTTAB(8,25)CHR$235
590 ENDPROC
600 DEFPROC MUSIC
610 RESTORE 620:REPEAT:READ N,L:
    SOUND 1,0,0,1:SOUND 2,0,0,1:SOUND
    3,0,0,1:SOUND 1,-15,N,L:SOUND 2,-
    15,N-48,L:SOUND 3,-15,N,L:UNTIL
    N=0:GOTO 260
620 DATA 129,15,13,5,129,10,117,25,
    129,15,137,5,129,10,117,25,157,20,
    157,10,145,25,149,20,149,10,129,25,
    137,20,137,10,149,15,145,8,137,10,
    129,15,137,5,129,10,117,25,137,20,
    137,10,149,15,145,5,137,10,129,15,
    137,5,129,10
630 DATA 117,25,157,10,157,10,157,
    10,169,10,157,10,145,10,149,25,165,
    25,149,10,129,10,117,10,129,10,121,
    10,109,10,101,45,0,0
640 DEFPROCCHURCH
650 VDU 23,241,24,60,60,60,60,60,60,
    60,60
660 GCOL 0,4
670 MOVE 600,100:DRAW 600,230
680 PLOT 85,950,230
690 DRAW 950,100:PLOT 85,570,100
700 MOVE 950,300:DRAW 1050,300:PLOT
    85,950,100
710 DRAW 1050,100:PLOT 85,1050,300
720 DRAW 1000,365:PLOT 85,950,300
730 PRINTTAB(10,26)CHR$241;CHR$241;
    CHR$241;CHR$241
740 PRINTTAB(15,25)CHR$241
750 ENDPROC
    
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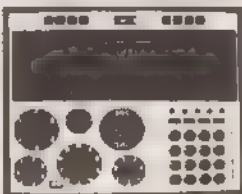
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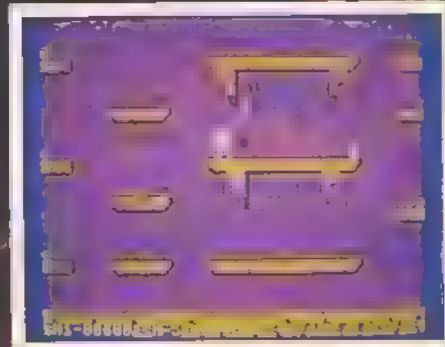
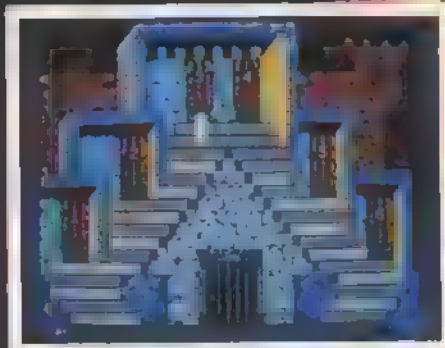
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The Popular

After boosting our own egos on page 20, this is where *Popular Computing Weekly* hands over to you. We're asking you to vote in our first ever readers' poll — a compilation of the best and worst of 1984.

1 Game of the year (overall)
This is the one. What do you think is the most stupendous, amazing, unsurpassable, inventive game released this year? What program were you still playing at three o'clock in the morning?

2 Arcade game of the year
Thumbs aching from megazapping on the 14th attack wave? Palms still moist with tension? Which program is responsible? We want to know the most compulsive, original, action packed, best written, graphically astounding, tension inducing, arcade game of the lot.

3 Adventure of the year
What adventure had you refusing to sleep or eat? Which produced most effectively that exquisite blend of unbearable frustration with bewitching addictiveness that is the mark of a really excellent adventure?

4 Business program of the year
Most adverts tell you a micro is suitable for business uses. What program released this year did you find most genuinely useful in your home or small business?

5 Utility program of the year
A wide section — perhaps a language package for your micro you've found useful. Or a program that lets you design your own games. You decide.

6 Peripheral of the year
A wide choice here — printers, plotters, light pens, remote control joysticks, midi interfaces. What peripheral really added something to your computer this year?

7 Best software house
Which software company do you feel brings out consistently good games at a fair price? Customer service is important, too — which company is most helpful/prompt in answering queries?

8 Most exciting new computer
Not necessarily your own machine but perhaps the one you've been eyeing most lasciviously in the shops. If you had the money, which computer would you buy?

Readers' Poll

9

Best programmer

Whose programs have that certain 'something', be it graphics/plot/programming expertise, that makes you look for the name of the author on the inlay rather than the pretty picture on the front?

10

Most promising new company

A lot of new companies sprang to the forefront with innovative new games in 1984. Which one do you think most deserves to go on to greater things in 1985?

11

Worst computer

Is it the one that's been gathering all the dust since last Christmas? Or the one they'd have to pay you to take from the shop?

12

Computer program you most regret buying

You saw the adverts, you saw the enormous box with pull-out poster and enormous booklet, you opened the box and loaded it up. Then you threw it straight out the window in disgust. What program most made you wish that you'd waited until you'd read a review in *Popular* before you bought it?

13

Most overrated software house

Big names. Enormous advertising budgets. Fleet Street coverage. What software house gets the most coverage, but produces the most rubbish in your opinion? What software house produces software that everyone else thinks is great, but you always find deadly dull — your chance to speak out by voting in this section.

14

Worst TV/cinema spin-off

Computer game spin-offs from TV, the movies, the Olympics, books, etc, were one of 1984's 'in' things. Which program failed most dismally to live up to the original?

15

Silliest advertisement

Instead of making you want to rush out and buy the product, this advert left you unsure whether to laugh or cry. Which ad made you feel certain the product must be a dodo.

All you have to do is fill in the spaces beside each category with your choices. If you don't feel qualified to answer any particular section, it doesn't matter, just leave that one blank. Then fill out the form at the bottom, and send it all off to: *Popular Computing Weekly*, Readers' Poll, 12-13 Little Newport Street, London WC2H 7PP.

Entries should reach us no later than Thursday January 10. The results will appear in *Popular Computing Weekly*, January 24.

Remember — all the programs you vote for must have been released later than January 1st 1984.

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Lows and highs

Felling tired and emotional on Boxing Day — Steve Hollywood and Ian Williams may have an explanation

This program will produce a high resolution graph of your biorhythms on a television or monitor and will, if desired, output the result on a printer using the screen dump routine provided by Psion in their *Easel* program. The program has been written for a JM QL but it has been run on the earlier version successfully.

Biorhythms, or rhythms of life, were first discovered by an Austrian psychologist, Herman Svoboda and a German doctor, Wilhelm Fleiss, working independently around the turn of the century. They both noticed that patients suffering from emotional and physical problems suffered more acutely in regular bouts, or cycles. They identified these periods as being 23 days for physical and 28 days for emotional problems. It appeared that these states, which are common to all human beings, varied by the periods shown in a sine wave pattern; ie there were distinct peaks when those conditions were at their best and corres-

ponding troughs when the emotional and physical states were in poor shape. The third area, that of intellectual performance, was discovered by a Dr Telscher, working on the scores of some of his students. He found that their performance tended to vary in 33 day cycles, much the same way as for the other two states.

Although considerable work has been carried out with regard to accident prevention using this knowledge, it is still not clear how much reliance can be placed on them. Nevertheless, it's a nice party trick to show your friends when they're feeling low (or high).

Reading the graphs is quite easy. There's a plus (+) and a minus side to the y axis and, in the centre of the X axis, the current date is shown, which you must input by altering the variables in Line 86 as shown in the listing. As each graph is drawn the letters I (intellectual), E (Emotional) and P (Physical) are appended. From there, it's simply a

matter of looking to see which graph peaks where. If they all peak together then it's a good day to tackle something difficult, but if the converse is true then perhaps you should spend a few days in bed!

Program notes

Lines 15-20 Load the machine code screen dump by Psion from their *Easel* cartridge. Since the program will do this automatically as soon as you run it, delete these lines if you don't want a printed copy. If you do want a printed copy then having typed in the program and saved it remove your program cartridge, then place the *Easel* cartridge in mdv1. Place your program cartridge in mdv2, type *Load mdv2 - biorhythms* or whatever name you used.

Line 330 This calls the procedure *messy* which in turn calls *trog*. Between them, these two do all the calculations and checking for leap year, etc.

Lines 465 This calls the procedure *doit* which draws the graphs.

Lines 105 - 140 provide suitable invocations of *doom*, reading the intersection points of the three graphs.

If you do not have a printer, and this program is configured to work with all printers of the Epson range, then amend Line 746 to *pause 1000* and delete Lines 15 to 20.

One other thing: my printer still reads in "F" as "E" so all "E" signs should be altered accordingly (/ is the channel prefix for the QL)

```

1 REMark *****
2 REMark *
3 REMark *   BIORHYTHMS by Steve Hollywood and Ian Williams
4 REMark *
5 REMark *****
10 REMark      Load print dump routine from mdv1
15 start=RESPR(300)
20 LBYTES mdv1_gprint_prt,start
25 REMark *****
30 REMark      Arrays :
35 REMark      #           Contains the number of days in each month
40 REMark      V           Is used to store the number of times the
45 REMark                      graphs pass through the axis.
50 REMark      D$          Contains the days of the week
55 REMark      F1$         Mild warnings of doom,etc.
60 REMark      F2$         More horrible invocations
65 REMark      b           Checks syntax of date entry
70 REMark *****
75 DIM N(13),V(20),D$(7,9),F1$(10,40),F2$(10,40),b(10)
80 amp=80
85 Y2=1984:M2=1:D2=18:D3=0:REMark ...M2= current month,D2=current date,Y2=curr
ent year
90 RESTORE 105
95 FOR A=1 TO 7:READ D$(A):NEXT A
100 FOR A=1 TO 12:READ N(A):NEXT A
105 DATA "MONDAY","TUESDAY","WEDNESDAY","THURSDAY","FRIDAY","SATURDAY","SUNDAY"
110 F1$(4)=" TAKE IT EASY ON "
115 F1$(3)=" BE WARE ON "
120 F1$(2)=" WATCH YOUR DIET ON "
125 F1$(1)=" BE-WARE OF BLACK CATS AND THE LIKE ON "
130 F2$(1)=" NOT ATTEMPT ANY HARD WORK ON "
135 F2$(2)=" TAKE A FEW ASPRIN AND REST ALL "
140 F3$=" SAY IN BED ALL DAY ON "
145 WINDOW=1,S12,256,0,0
150 PAPER 0
155 MODE 512
160 CLS
    
```



```

165 CSIZE 1,0
170 PRINT TO 15;"BIORHYTHMS";PRINT TO
15;"=====
175 DATA 31,28,31,30,31,30,31,31,30,31,
30,31,31
180 PRINT
185 PRINT "Type in your name and press
the ENTER key."
190 PRINT:INPUT N$
195 IF N$(1)=" " THEN N$=N$(2 TO):GO
TO 195
200 IF N$(LEN(N$))=" " THEN N$=N$(1 TO
LEN(N$)-1)
205 IF N$="" THEN GO TO 160
210 CLS
215 PRINT TO 15;"BIORHYTHMS"\TO 15;
"=====
220 PRINT"\Hi there ";N$
225 PRINT"\Type in your birthdate in
this format:"
230 PRINT"\          day.month.year"
235 PRINT"\example:~"
240 PRINT"\If you were born on the 23rd
of October"
245 PRINT"\1960 then enter the data like
this:"
250 PRINT\TO 15;"23.10.60"
255 PRINT"\do not forget the full
stops!!!"
260 PRINT"\Now enter your data....."
265 INPUT e$
270 IF e$(1)="." THEN e$=e$(1 TO
LEN(e$)-1)
275 L=0
280 FOR A=1 TO 1FN(e$)
285 IF e$(A)="." THEN L=L+1:b(L)=A
290 NEXT A
295 IF L<>2 THEN GO TO 215
300 D1=e$(1 TO b(1)-1)
305 m1=e$(b(1)+1 TO b(2)-1)
310 IF D1=0 OR m1=0 THEN GO TO 215
315 y1=e$(b(2)+1 TO)
320 IF y1<84 THEN y1=y1+1900
325 IF y1<1880 THEN GO TO 215
330 messy
335 PRINT
340 D=L-10
345 OPENE6,ser1:BAUD 9600
350 ls=33+LEN(N$ & D2 & M2 & Y2)
355 PRINTE6,CHR$(27);"E";\;TO (40-ls/2);
FILL$( "*",ls)
360 PRINTE6,TO (40-ls/2);"* Biorhythms
for ";N$;" printed on ";D2;" / ";M2;" / ";Y2;
" *"
365 PRINTE6,TO (40-ls/2);FILL$( "*",ls)
370 PRINTE6,CHR$(27);"e"
375 WINDOW 81,512,256,0,0:CLS
380 SCALE1,192,0,0
385 LINE 19,0 TO 19,191
390 LINE 19,95 TO 259,95
395 CURSOR 30,49:CSIZE 3,1:PRINT "+"
400 CURSOR 30,180:PRINT "-"
405 CSIZE 0,0:CURSOR 142,98,0,0:PRINT D2
410 FOR x= 19 TO 256 STEP 12
415 LINE x,93 TO x,97
420 NEXT x

```

```

425 LINE 138,93 TO 138,97
430 LINE 150,93 TO 150,97
435 LINE 139,91 TO 139,99
440 LINE 151,91 TO 151,99
445 LINE 140,93 TO 140,97
450 LINE 152,93 TO 152,97
455 cy=23 460 c=1 465 doit 470 cy=28
475 c=2 480 doi 485 cv=33 490 c=3495 doit
500 OPENE6,ser1:PRINTE6
505 PRINTE6:PRINTE6;TO 10;"P = Physical"
510 PRINTE6:PRINTE6;TO 10;"E = Emotional"
515 PRINTE6:PRINTE6;TO 10;"I =
Intellectual"
520 PRINTE6:PRINTE6;TO 20;"Analysis"
525 PRINTE6;TO 20;"=====
530 PRINTE6:PRINTE6;"According to your
biorhythms you should:~"
535 f1=1:f2=1:f3=1:f4=03
540 N$=" "
545 FOR A=10 TO 19
550 IF V(A)=1 THEN PRINTE6;\F1$(f1);N$;
D$(f4);f1=f1+1
555 IF V(A)=2 THEN PRINTE6;\F2$(f2);N$;
D$(f4);f2=f2+1
560 IF V(A)=3 THEN PRINTE6;\STAY IN BED
ON ";N$;D$(f4)
565 f4=f4+1:IF f4=7 THEN f4=0:N$="NEXT "
570 NEXT A
575 GO TO 25
580 DEFINE PROCEDURE messy
585 L=365*(Y2-y1)
590 IF M2>1 THEN FOR x=1 TO M2-1:L=L+
N(x):NEXT x
595 IF m1>1 THEN FOR x=1 TO m1-1:L=L-
N(x):NEXT x 600 L=L+D2-D1
605 Y=INT(v1/4)+4
610 Y=Y+4:IF Y>Y2 THEN GO TO 625
615 A=Y:trig:IF A=1 THEN L=L+1
620 GO TO 610
625 IF Y=Y2 THEN GO TO 645
630 A=y1:trig:IF A=1 AND m1<3 THEN L=L+1
635 A=Y2:trig:IF A=1 AND M2>2 THEN
L=L+1 640 RETURN
645 A=y1:trig:IF A=1 AND m1<3 AND
M2>2 THEN L=L+1 650 RETURN
655 END DEFINE messy
660 DEFINE PROCEDURE trig
665 IF INT(A/4)=A/4 THEN IF INT(A/100)
<>A/100 OR INT(A/400)=A/400 THEN A=1:RET
urn 670 A=0:RETURN 675 END DEFINE trig
680 DEFINE PROCEDURE doit
685 POINT 19,(amp*SIN(2*PI/cy*D)+95)
690 FOR x=19 TO 259 STEP 2
695 Y=(amp*SIN(2*PI/cy*(D+(x-19)/12)
)+95)700 LINE TO x,Y
705 IF Y<96 AND Y>94 THEN V((x
-19)/12)=V((x-19)/12)+1 710 NEXT x
715 ON x GO TO 720,730,740
720 CSIZE 0,1:CURSOR 261,Y,0,0:PRINT "P"
725 RETURN 730 CURSOR 268,Y,0,0:PRINT
"E" 735 RETURN
740 CURSOR 271,Y,0,0:PRINT "I"
745 CLOSEE6:CALL start,0,0,0,0,0,0,0,0,0
750 RETURN
755 END DEFINE doit

```


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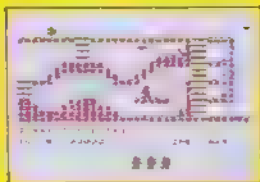
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Pairs

on Amstrad

Pairs is an old favourite which still holds a mental challenge in today's Zap-Ping computer world. The ■ cards are laid-out randomly, face downwards, and each player takes turns ■ flip any two over. If

their values match, then the player wins them, and plays again. The player with most cards at the end of the game is, logically, the winner.

You can play another opponent, or the Computer. If you choose the latter, then you will have to keep on your toes. Although it turns the first card over randomly, it searches its memory to determine whether

or not it has 'seen' a match, at least twice. If it has, then it finds it, and wins the pair. For this reason, it starts very slowly, but is dynamite towards the end of the game. Alter the value of 'H' in line 270 to zero for a real challenge, or to -2 if your memory is a little ex... um...

The game is played in Mode 1, which limits the display to four colours.

```
10 CLS:CLERE:PRINT "P A I R S" :GOTO 100
20 MODE 1 :PRINT "MODE 1" :GOTO 100
30 FOR I=0 TO 13:FOR J=0 TO 13:GOTO 100
40 SYMBOL 127:GOTO 100
50 CLS:GOTO 100
60 WHILE 1=0:GOTO 100
70 IFAC=0:GOTO 100
80 CLS:GOTO 100
90 IFAC=0:GOTO 100
100 GOTO 100
110 GOTO 100
120 GOTO 100
130 GOTO 100
140 GOTO 100
150 GOTO 100
160 GOTO 100
170 GOTO 100
180 GOTO 100
```

Arcade Avenue



Monty tips

Can I offer my thanks to everyone who wrote in to tell me how to get past screen 14 of *Monty Mole* — in particular James Barker of Southwell, David McCann of Glasgow and even Kevin Norbury of Gremlin Graphics itself. As you doubtless know, we printed the answer a little while ago. Michael Aherne of Glasgow has also written in with this tip and goes on to say "although I can get past the barrier on screen 14 there is a bit of coal up on a pipe on the same screen and once I have collected this I can't get down without losing a life. What do I do? Do you have any infinite lives tips for *Mugsy*, *Chuckie Egg* or

Beaky and the Eggsatchers? Also how do you blow up the reactor in *Blue Thunder*?

Hopefully someone out there can help us with these problems. Michael — and regarding Monty rescue is close ■ hand in the shape of Michael Noon also of Glasgow who writes, I assume, about the Spectrum version. "Poke 37512,0 gives endless lives and Poke 47639, 255 and Poke 47640,0 together gets rid of the angel flying up when you lose a life". Many thanks for that last one as I find the death sequence incredibly irritating. Michael also says he has discovered a bug in the first screen of the same program. "Walk to the left jumping over the bucket and into the hut. As long as you don't stop the picket will walk right past you. Then by repeatedly jumping up, Monty will get onto the roof of the hut. Then you can jump onto the cloud and eventually make your way ■ the squirrel. The game will probably then crash but if it doesn't it soon will when

you try to leave the screen." Thanks for that bit of fun, Mike. I've noticed myself that rather than destroying the dog once you have the bucket you can wait on the ledge and jump onto the picket making his top half disappear and leaving a pair of legs walking around. Unfortunately, you are then stuck.

Another Monty tipster is Ian Richards of Aberdeen who then goes on to give us some useful tips for the Spectrum *Kokotini Wilf*. "Enter and Run the following program then start your tape.

```
10 Clear 24100 : Load "" Code
20 Randomise Usr 65100 : Load "" Code
30 Poke 42214,XX : Print Usr 41200 (where XX is the number of lives)
```

Now comes my inevitable high scores: 1) Ocean's *Decathlon*. Day 1, 462000 (Round 7) Day 2 502000 (Round 5). 2) The Edge's *Psytraxx* 11,400 (29%). In this game there is a randomly hidden red man that gives an extra life if bumped into. The

game is quite addictive but plays like *Atic Atac* with more rooms. I did not think much of the Spectrum version of *Beach Head* as I completed the most difficult level on day 1 and have not touched it since. Finally, can anyone get past level 13 on *Frank N Stein* for PSS? Well why not get a bit more practice in on Frank with this infinite lives routine that comes all the way from Olav Nygaard of Norway. "Merge the header and change it ■ this:
10 Border 0: Ink 0: Clear 24750: Load "" Screen : Paper 0: Print at 0,6: Load "" Code: Poke 28287, (number of lives 0-255): Randomise Usr 27890 "


Tony Keadle

The Arcade Corner is a new section for anyone who enjoys playing arcade games. If you have any comments, from playing tips on difficult games or programs you'd particularly like to praise (or blame) then write ■ Tony Keadle, Arcade Avenue, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

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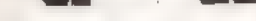
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— and 13th Avenue, 1988

Inevitably, there are plenty

At the other end of the scale is Sinclair's own Music Master package which sells for £9.95 and uses the Spectrum's internal sound (what sound? I hear you cry), turning the computer into a very simple organ.

Inevitably, the quality of the software provided is what counts here. The Trichord comes with what seems to be a versatile composer package and includes a number of pre-programmed sounds on firmware. It sells for \$26.95 including an internal amplifier. The DkTronics device sells at \$29.95 and includes the Music Designer program, which is a joystick controlled composer/sequencer. Ricolf's add-on is the most expensive at \$45.95 and seems to include only the

Addresses: DKTronics, Saffron Walden, Essex CB11 3AQ (tel: 0799 263500); Newtech Developments, 1 Courtland Road, Newton Abbott, Devon TQ12 2JA (tel: 0928 623636); Ricoll Electronics Ltd, 48 Southport Road, Ormskirk, Lancashire L39 1QR. (Ricoll also produce a digital sound sampler for the Spectrum — of which more next week)

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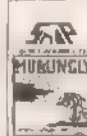
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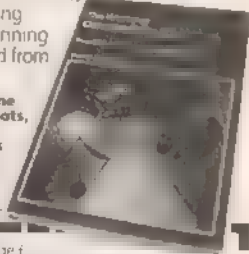


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old favourites to deter all but the most determined wassailers.

Program Notes

1-8 Sets up colours, and pauses
9-40 The Read section for the notes
50-55 First tune data
56-105 Second tune data

115-140

200-300

300-370

400-600

9997

9998

9999

Third tune

Fourth tune

Fifth tune

Sixth tune

Repeat last tune

Save routine

Reset colour to original

```

1 RESTORE 50
4 BORDER 0: PAPER 0: INK 0: ■
LS
5 CLS : PRINT AT 10, (31-22)/2
FLASH 1: INK 2: PAPER 7: BRIGHT
11 "PRESS ANY KEY TO BEGIN." : P
AUSE 0: CLS
8 PRINT "Good King Wenceslas
"
9 FOR d=1 TO 2
10 LET a=-4
20 READ b,c: IF b=99 THEN REST
ORE 50: PAUSE 50: NEXT d: GO TO
56
30 BEEP b,c
40 GO TO 20
50 DATA a,9,a,9,a,9,a,11,a,9,a
,a,2,a,4,a,6,a,4,a,6,a,6,2,a,9,2
,a,9
51 DATA a,9,a,9,a,9,a,11,a,9,a
,a,2,a,4,a,6,a,4,a,6,a,6,2,a,9,2
,a,9
52 DATA a,16,a,14,a,13,a,11,a,
13,a,11,2,a,9
53 DATA a,6,a,4,a,6,a,6,2,a,9,
2,a,9
54 DATA a,4,a,4,a,6,a,6,2,a,9,
9,2,a,11
55 DATA a,16,a,14,a,13,a,11,2,a
,a,2,a,14,a,9,9,9,9
56 PAUSE 50: PRINT "O come a
l
l ye faithful"
57 RESTORE 55: FOR d=1 TO 2
58 LET a=-4
59 READ b,c: IF b=99 THEN REST
ORE 55: PAUSE 50: NEXT d: GO TO
59
60 BEEP b,c

```

```

61 GO TO 59
65 DATA a,4,a,2,a,4,a,-1,a,4,2,a
,a,2,a,-1,a,6,a,6,a,6,a,9,2,a,8,
,a,6
66 DATA a,4,2,a,4,a,3,a,1,a,3,
,a,4,a,6,a,6,2,a,2,a,2,a,5,1,
,a,4,a,6,a,6,2,a,2,a,1,5,1,-2,-1,
,a,3,-1
67 DATA 2,a,11,a,9,a,6,2,a,9,2
,a,6,a,6,a,6,a,6,1,4,a,3,a,2
,1,a,-1
68 DATA a,4,a,4,a,3,a,4,a,6,2,a
,a,4,1,a,-1
69 DATA a,6,a,6,a,6,a,6,a,9,2,a
,a,6,a,6
70 DATA a,6,a,9,a,6,a,6,a,4,2,a
,a,3,a,4,a,9,2,a,6,2,a,6,a,2,4,2,
,a,4
71 DATA 99,99
90 PAUSE 50: PRINT "The first
nowell"
91 RESTORE 100: FOR d=1 TO 2
92 LET a=-4
93 READ b,c: IF b=99 THEN REST
ORE 100: PAUSE 50: NEXT d: GO TO
115
94 BEEP b,c
95 GO TO 93
100 DATA a,2,a,2,4,a,1,5,2,a,
2,4,a,2,6,a,2,7,2,a,9,a,2,11,a,2
,13,a,14,a,13,a,11,2,a,9
101 DATA a,2,11,a,2,13,a,14,a,1
3,a,11,a,9,a,11,a,13,a,14,a,9,a,
7,2,a,6
102 DATA a,2,6,a,2,4,a,1,5,2,a,
2,4,a,2,6,a,2,7,2,a,9,a,2,11,a,2
,13,a,14,a,13,a,11,2,a,9
103 DATA a,2,11,a,2,13,a,14,a,1

```

Book Ends



Book The Amstrad Program Book Price £5.95
Micro Amstrad Supplier Phoenix Publishing Associates Ltd, 14 Vernon Road, Box Hay, Herts WD2 2JL

While there is no longer severe program starvation for the Amstrad, choice is still relatively low and prices are high, so a book of listings could prove tempting to the new owner. I would not, however, recommend this one.

It succeeds in committing most of the sins that make such volumes a waste of money. All the old favourites are here from the Basic Bomber to the adventure which lacks just that vital quality. In addition several programs are less than two pages in length, though this does at least mean not too much time is wasted typing them in!

Add to this the brief introductions and amateurish cartoons which try to give this tired old selection a semblance of life and you have what looks like a rush job which totally fails to exploit an excellent machine.

John Minson



Book Basic Micro Amstrad Programming on the Amstrad Price £7.95
Micro Amstrad Supplier Phoenix Publishing Associates Ltd, 14 Vernon Road, Box Hay, Herts WD2 2JL

As the Amstrad is a likely first micro there must be a need for books like this which provide an introduction for the computer virgin.

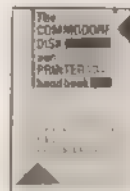
Wynford James has taken a positive 'hands on' approach, and having reassured that no keyboard input can damage the

machine, urges the reader to experiment, which is obviously the best way to learn.

This approach leads to most areas being introduced via practical examples, and while it leads to certain topics being discussed in an unexpected order (eg string variables before numeric ones) it works because it is fun. There is also a good chapter on tidy, structured programming.

While the book is obviously limited in depth — its treatment of sound is particularly brief — it should provide a firm foundation for the novice.

John Minson



Book The Commodore Disk and Printer Handbook Price £7.95
Micro Commodore Supplier Phoenix Publishing Associates Ltd, 14 Vernon Road, Box Hay, Herts WD2 2JL

Though the addition of disk drives and printers vastly expands the capabilities of any micro, it also creates a whole new language which must be learnt before they can be mastered to their best advantage.

Concentrating on the Commodore 1541 disk drive and 1536 printer, plus a final chapter on the Epson RX-80 printer, this book aims to tame these peripherals for the owner who already has a good knowledge of Basic.

Though the initial discussion of the new commands you'll encounter is a trifle dry, it is well stocked with tips and warnings, and is clearly laid out. Then follows practical application of this new knowledge in the development of several data-handling programs. It will take a fair while to absorb the information contained here but should help new disk owners greatly.

John Minson


```

3,a,11,a,9,a,11,a,13,a,14,a,9,a,
7,12,a,6
104 DATA a/2,8,a/2,4,a+1.5,2,a/
2,4,a/2,6,a/2,7,2,a,9,a/2,14,a/2
13,2,a,11,a,11,1.5,a,9,a,14,a,1
3,a,11,a,9,a,11,a,13,a,14,a,9,a,
7,12,a,6
105 DATA 99,99
115 PRINT "While shepherds wat-
ched their flocks by night...":
RESTORE 120: FOR n=1 TO 2
116 READ b,c: IF b=99 THEN REST
ORE 120: PAUSE 20: NEXT n: PAUSE
50: GO TO 200
117 BEEP b*1.5,c: GO TO 115
120 DATA a,8,a+1.5,9,a/1.5,9,a,
7,a,5,a,10,a,10,a,9,a,7,a,9,a,12
,a,12,a,11,a+2,12
130 DATA a,9,a+1.5,14,a/1.5,12,
a,10,a,9,a,7,a,5,a,4,a,9,a,7,a,5
,a,5,a,4,a+2,5
140 DATA 99,99
200 RESTORE 220
205 PRINT "Hark the herald ang-
els sing."
206 RESTORE 220: FOR n=1 TO 2
210 READ b,c: IF b=99 THEN REST
ORE 220: PAUSE 20: NEXT n: PAUSE
50: GO TO 300
215 BEEP b,c: GO TO 210
220 DATA a,2,a,7,a+1.5,7,a/1.5,
7,a,7,a,11,a,9,a,9,a,14,a,14,a,
1.5,14,a/1.5,12,a,11,a,9,a+2,11
225 DATA a,2,a,7,a+1.5,7,a/1.5,
7,a,7,a,11,a,9,a,9,a,14,a,9,a+1
.6,9,a,1.5,6,a,5,a,4,a+2,2
230 DATA a,14,a,14,a,14,a,7,a,1
,a,11,a,11,a,9
235 DATA a,14,a,14,a,14,a,7,a,1
,a,11,a,11,a,9
240 DATA a+1.5,16,a/1.5,16,a,16
,a,14,a,12,a,11,a+1.5,12,a,6,a/1
.5,11,a/1.5,12,a+1.5,14,a/1.5,7,
a,7,a,9,a+2,11
250 DATA a+1.5,16,a/1.5,16,a,16
,a,14,a,12,a,11,a+1.5,12,a,9,a/1
.5,11,a/1.5,12,a+1.5,14,a/1.5,7,
a,7,a,9,a+2,11

```

```

260 DATA 99,99
300 LET s=2: PRINT "It came up
on the midnight clear."
310 FOR n=0 TO 1: RESTORE 330
315 READ b,c: IF b=99 THEN PAUS
E 20: NEXT n: PAUSE 50: GO TO 400
320 BEEP b*1.5,c: GO TO 315
330 DATA a/5,5,a/5,7,a,9,a,7,a,
5,a/5,7,a/5,9,a,10,a,9,a,7,a,12,
a,12,a,9,a/5,10,a/5,12,a,14,a+5,
12
340 DATA a/5,9,a/5,10,a,12,a,12
,a,9,a,5,a,10,a,9,a,7,a+1.5,a/5,
,a/5,2,a/5,10,a,12,a,9,a,7,a+5,
9
350 DATA a,5,a,4,a,2,a,4,a,7,a,
6,5,a/3,4,a,2,a,9,a,7,a,5,3,4,a,
a+5,0
360 DATA a,0,a,12,a,10,a,9,a/5,
7,a/3,9,a,10,a,9,a,7,a/5,5,5,7
,a/5,9,a/5,10,a,12,a,9,a,7,a+2,5
370 DATA 99,99
400 PRINT "O little town of Be-
thlehem."
410 FOR n=0 TO 1: RESTORE 430
420 READ b,c: IF b=99 THEN PAUS
E 20: NEXT n: PAUSE 50: GO TO 5
425 BEEP b,c: GO TO 420
430 DATA a+5,2,a+5,7,a+5,7,a+5,
7,a+5,9,a,11,a,9,a,11,a,12,a+5,1
4,a+5,11,a+5,12,a,11,a,7,a+5,9,a
,a+5,9,a+5+1.5,7
440 DATA a+5,2,a+5,7,a+5,7,a+5,
7,a+5,9,a,11,a,9,a,11,a,12,a+5,1
4,a+5,11,a+5,12,a,11,a,7,a+5,9,a
,a+5,9,a+5+1.5,7
450 DATA a,7,a,11,a+5+1.5,14,
a,16,a,14,a,12,a,11,a,9,a,7,a,9,
a,11,a,12,a+5,14,a+5,2,a+5,7,a+5
.11,a+9,a+5,7,a+5+1.5,2
460 DATA a+5,2,a+5,7,a+5,7,a+5,
7,a+5,9,a,11,a,9,a,11,a,12,a+5,1
4,a+5,11,a+5,12,a,11,a,7,a+5,9,a
,a+5,9,a+5+1.5,7
600 DATA 99,99
9997 RESTORE 450: GO TO 420
9998 SAVE "C CAROLS" LINE 1
9999 POKE 23593,56: BORDER 7

```

Xmas Holly

on Spectrum

This short and simple program will add a seasonal touch to your TV or monitor screen. If you print it out it could also be useful for last minute Christmas cards.



```

1 REM "*** XMAS HOLLY ***"
2 REM * SINCLAIR SPECTRUM *
3 REM "by E.A.DUNCAN-DUNLOP"
4 REM 1 DAN-Y-LAN ABERKENFIG
5 REM N# BRIDGEND MID GLAM
20 LET C=25: LET B=7
25 PAPER 0: INK 4: CLS
30 FOR A=5 TO 230 STEP 40
40 PLOT a,b
50 LET C=(RND*40)+10
60 DRAW C,C,1
70 DRAW -C/3,-C/5,-2

```

```

80 DRAW -C/2.5,-C/5,-2
90 DRAW -C/5,-C/3.4,-2
100 DRAW -C/10,-C/3,-2
110 REM other half of leaf
120 DRAW C/2.5,-C/10,-2
130 DRAW C/3.4,C/5,-2
140 DRAW C/3.4,C/3.4,-2
150 DRAW 0,C/2,-1
160 NEXT A
170 LET B=B+50
180 IF B<150 THEN GO TO 30

```



Xmas Holly
by E Duncan Dunlop



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|---|--------|
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| | |
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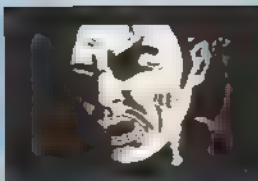
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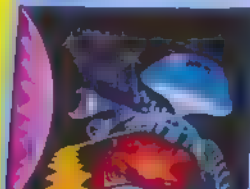
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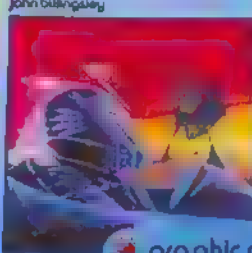
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Data Read

on Spectrum

Have you ever spent ages frantically trying to find the last error in machine-code data statements? It can be very tiring on the eyes, trying to check hundreds of numbers from a M/C listing.

However, if you own a Currah micro-speech and ZX Spectrum it is possible for

the speech synthesizer to read out the data to you without you once looking at the screen. Simply type in the program exactly as listed and *Run* it. The program will then ask you for the start line of the data statements.

If you want you could try modifying the program so that it *Peeks* a block of M/C rather than *Reading* it from data statements. It would also be a simple matter to modify the program for any speech synthesizer for any computer. If you have a speech reco-

gnition unit it may even be possible to read out the data to you without you once looking at the screen. Simply type in the program exactly as listed and *Run* it. The program will then ask you for the start line of the data statements.

If you want you could try modifying the program so that it *Peeks* a block of M/C rather than *Reading* it from data statements. It would also be a simple matter to modify the program for any speech synthesizer for any computer.

```
9500 LET keys=0: RESTORE 9509:
DIM b*(10,10): FOR a=0 TO 9: REA
D b*(a+1): NEXT a
9501 INPUT "Start of data statem
ents "f: RESTORE f
9502 READ a: LET a$=STR$ a
9503 IF a<0 THEN LET s$="m(ii)(
nn)uz": PAUSE 10: LET a=ABS a
9504 LET a$=STR$ a
```

```
9505 FOR b=1 TO LEN a$:
9506 LET c=VAL a$(b): LET s$=b$(
c+1)
9507 PAUSE 60: NEXT b: LET a$="k
om(ar)"
9508 GO TO 9502
9509 DATA "n(ori)t","wu(nn)","f(n
uu)","(dth)r(oe)","f(oo)r","f(ii
)v","miz","mavn","(ii)t","n(ii)
n"
```

Data Read
by N Osborn

Memory Search

on Amstrad

The program enclosed is a fast memory search. It will search through the whole 64K of computer memory in 16 seconds for any given string.

A blow by blow description follows:

Program notes

- Line 10. Set up windows.
- Line 20. Create a dummy string (F\$) and prompt user.
- Line 30. This method to input user commands is not the most efficient when only two options are required. It was included as an interesting way to accept keys. It can be used with any number of keys, on any computer supporting the *Instr* function. (you

can do away with the *Upper\$* if required. Note the leading space in the quotes is required to catch null entries.

Line 40. Catches any illegal key pressed. Accepts string to search for (if required).

Lines 60, 70 Accepts string of values which are concatenated into the search string.

Line 80. Accepts starting address. The complex part at the end converts those nasty negative values BASIC returns when you take the value of a number larger than &7FFF.

Line 90. Sets up a counter (A) to step through the memory. Converts the address into MSB/LSB form. Note we can't use amstrads modulus division here as it falls over at values greater than &7FFF, (not a bug, its only supposed work on integers!). The pokes are the heart of the routine. Basic has

stored the address of the dummy string (F\$). We poke the new values into this area and fool the system into thinking the string lives elsewhere, at our address. The *Instr* function is used to check this string for the search string.

Line 100. Prints the current address being searched, closes the loop, and finishes.

Line 110. Subroutine to display the address of any matching bytes.

Notes. All values can be entered in decimal or hex (preceded by &). The routine can be converted to other machines which support the *Instr* command. The pokes on line 90 may have to be replaced with *Poke VARPTR(F\$)+1, A-M*256: Poke VARPTR(F\$)+2, M*. The window commands may be omitted for other machines.

```
5 REM Memory search by Mark Rice. Viking Software 1984
10 MODE 1: WINDOW 1,40,1,3: WINDOW #1,20,40,10,20: WINDOW #2,1,20,10,10
20 CLS: F$=SPACE$(250): PRINT "S>tring or B>yte search?"
30 ON INSTR("SE",UPPER$(INKEY$)) GOTO 30,50,60
40 GOTO 30
50 INPUT "Search string ":S$: GOTO 80
60 PRINT "Enter bytes (null to end)"
70 INPUT " "&B$: IF B$<>" " THEN S$=S$+CHR$(VAL(B$)): GOTO 70
80 INPUT "Start address ":A$: S=VAL(A$): (VAL(A$)<0)&5536
90 CLS #1: FOR A=S TO 5535 STEP 200: M=INT(A/256)
:POKE 255+1,A-M*256:POKE 255
+2,M: F=INSTR(F$,S$): IF F<>0 THEN GOSUB 110
100 PRINT #2,HEX$(A,4): NEXT: GOTO 20
110 PRINT #1," "HEX$(A+F)*H":A=F: RETURN
```

Memory Search
by M Rice

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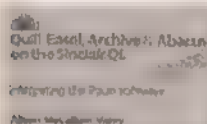
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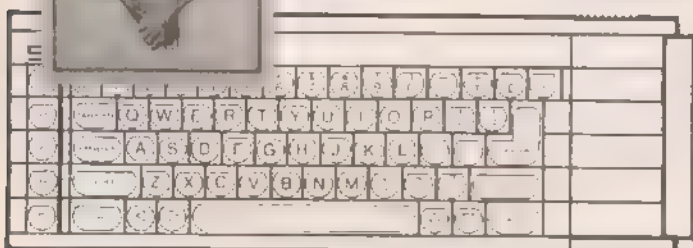
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A warrior's tale

Across the frozen lakes and forests of the snow-covered land shines the vast saffron moon. The deep snow muffles all sound, even the shriek of a small animal, surprised by a larger predator.

But not all is desolation and fear. A narrow track, now almost hidden by an earlier snowfall, winds through the trees, leading to a small resting-place, a haven in the bleak land. The surrounding snow is bathed in warm light from the muted windows. Let's draw closer...

Flames from the roaring, crackling fire paint the walls with their light and wake the amber heart of the hot wine. "Come now, lad, tell us the story!", cackles one of the group around the fire. "At the turn of the year, we must all repay, with a good tale, the master of this comfort-house for his attentions during the last twelve-month. Even strangers, so — let us hear thine."

He is speaking to a young warrior, sitting in the midst of these old men, his broadsword and leather shield close by his side.

"Aye, I will tell you a story — but not for mine host, welcome though his ministrations have been in this cold night. No, I shall relate my tale for the sake of my master, The Grand Elf. He is sore pressed in this festive season and has sent me in his place. Now, fill your jugs with wine and listen to what he has ■■■ tel you ..."

From beneath his chain mail, the warrior brings forth a crumpled sheaf of papers.

Following the words with a calloused finger, ■■■ begins to read, slowly and haltingly: "As Old Father Time turns his back on 1984 and hobbies off, young 1985 prepares to take over. Winston Smith didn't emerge from his cocoon and the world didn't end as some predicted. But it has been a pretty important year for us computer-users.

"And especially for that most important section, the adventurer (of course, we are a special breed!). Arcade games have become extremely sophisticated in the last year, but to me they have all become the same: at this time last year, even I, ancient as I am, would eagerly await the release of a new Arcade Hit. In the last few months however, along with younger players of my acquaintance, I have become rather bored with the latest *Fred Eats a Hamburger* or *Cosmic Cabbages* from *Cricklewood*. But adventures have gone from strength to strength. The genre has been, and still is, under attack from those who would wring commercial advantage from any quarter — 'Ahh', they say, 'These Adventure things seem to be quite popular. Get the programmers on it, bung in a four-colour cassette insert, give away a few thousand quid, and we'll clean up'. This may seem cynical, but there is an awful lot of trash at the top end of the market (price-and package-wise), but super stuff at the lower end. Adventures, you see, don't necessarily rely on super-fast machine-coding, although that makes the whole thing even better — no, even slow response times can be forgiven, as long as both scenario and atmosphere are interesting."

Here the young warrior stops and gazes meaningfully at the faces around him, before carrying on "You will, I think, expect me to concentrate on the main adventures of the year in this retrospective. 1983 brought us *The Hobbit*, probably the most influential program (at least in Britain); influential, that is, in bringing adventures to the attention of many who would otherwise have thought the genre boring. *Valhalla* was the other main adventure of 1983, and both these programs are still with us.

"1984, meanwhile, has seen the release of *Lords of Midnight* and *Doomdark's Revenge*. LOM has been as influential as the others mentioned, and there is surely no need for an introduction.

"Another event has made an impact, and

that is the release, on Compuserve, of MUD — the Multi-User Dungeon. This is an interactive and dynamic adventure, which changes daily and according to who is playing at the time. For those of you already hooked, look out for the regular series of articles in *Micro Adventurer* by one of the authors, Richard Bartle.

"More good news for Commodore owners was the release of many of the Infocom masterpieces at a very affordable price (although only on disc) — now how about the Atari, Apple and IBM versions? In fact, CBM 64 software is getting better and better, witness *Macbeth*, which I spoke about recently.

"A feature becoming more widely-used is the cash prize. While *Eureka's* 25,000 green ones is impressive, the more modest £400 from Incentive Software for the first adventurer past the winning post of *The Key Trilogy* ■■■ linked to a much better adventure. Rumour has it that the prize has now been won, and by one of the Corner's correspondents, to boot!



"Meanwhile, Level 9 consolidated their position as producers of the most interesting home-grown games available. It has added excellent graphics to develop the atmosphere of its games.

"The Amstrad, I think, will be around for a long while, thanks to the built-in monitor. Because of this, the display is probably the best of the home micros, and there are already some pretty good adventures for the machine, such as the *Arnold* series from Nemesis Software.

Although ■■■ would be easy to discuss the well-publicised adventures of 1984, for me the important programs are the less well-known adventures."

Laying down the sheaf of papers, the warrior stops "Here my master has paused to gather his strength. The Grand Elf has enjoined me to return here, at the same time, in fourteen days. Then I shall complete his tale. To give thee good cheer until then, he sends his wish that you enjoy this season of goodwill. And he hopes to see you here again in the New Year, safe and well."

"Aye, lad, well done!", answers one of the old men, nodding slowly. "Thy master is surely a sage scribe, whose thoughts must be slowly digested and pondered. Raise thy cups to The Grand Elf and the noble pastime to which he devotes his waking hours!"

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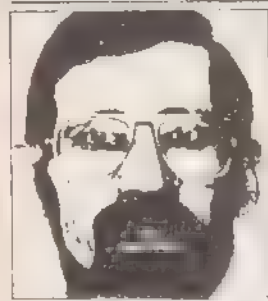
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Accidental loss

R. Watson of Dundee, writes:

Q I have a Dragon 32 and I have been trying to write a piece of code that will enable me to restore a program that has been accidentally Nixed.

I have not had any success at all so far. Is this actually possible on my machine, and if so how?

A One method that you could use is to include the routine below in your programs. Once it has been included, then to restore a Nixed program, simply enter EXEC 32750.

```
10 CLEAR 200,32749
20 DATA 159,25,159,131,49,2,159,27,
159,39,159,31,57
30 FOR I = 1 TO 14
40 READ A: POKE 32749 + I, A
50 NEXT I
```

16K upgrade

J. Wenston of Billingham, Cleveland, writes:

Q After previously buying my children a Sinclair Spectrum 16K in December 1982, I have been disappointed at their lack of interest. They say it is outdated and that all the games they have borrow are 48K.

To help rekindle their interest (and my interest) could you please advise:

1. Do we sell and buy a BBC?
2. What is the best way to upgrade to 48K?
3. Which are the best and most useful add-ons?
4. Can we upgrade the machine past 48K?

A I sympathise with your problem — the 16K ma-

chine has always suffered from a lack of software, and indeed could be said to be outdated, due to its limited memory capacity.

I will try and answer your questions one by one, as honestly as I can, bearing in mind that I am as prejudiced as the next man.

I would not sell and buy a BBC, firstly because the second hand market for 16K Spectrums is not good, and secondly because the software you have already bought will be wasted.

The simplest way to upgrade to 48K is to buy a 32K ampack. This is available from most computer shops that stock the Spectrum. From your point of view the best add-ons would seem to be those which will assist game playing. I would recommend a programmable joystick (such as that manufactured by Cambridge Computing).

As far as upgrading the machine past 48K is concerned, the answer is yes you can upgrade, but for what?

There is very little software that makes use of the extra memory available, so I would not suggest that as a course of action for you. Personally, I have never found the Spectrum's memory size to be a major problem.

Amstrad advice

Andrew Hayward of Chellaston, Derby, writes:

Q I am on the brink of buying the Amstrad CPC464 computer as my second home micro. I'm writing to you to ask for your advice. Do you think the Amstrad is going to be a contender in the future against the Spectrums and the Commodores? If so, how well is it backed up by software houses compared with the older micros after their first few months on the market?

A The Amstrad is certainly here to stay. I think that it will retain a good share of the home computer market, although more software becoming available will not harm its cause.

A number of software houses that have already made

their names (and their money) in the Spectrum/Commodore software market are already offering, or developing Amstrad versions of their popular games (and other software). I would say that there is not as much software available for the Amstrad as there was for some of the more established micros at the same time in their development, but this is more than compensated by the quality of the Amstrad offerings which is significantly higher.

Compatability problem

Q With the launch of Commodore's new computers, does this mean Commodore are phasing out the Vic 20?

If so will I be able to play their future games on my Vic 20 with a 16K (switchable) expansion pack.

A The Vic 20 does not appear to play any part in Commodore's plans for the home computer market in the future. This means that Commodore supplied software for the Vic will not be produced in the future, although some software houses will continue to produce games for this once-popular computer. Software produced for the new Commodore machines will not be any more compatible with the Vic than is the Commodore.

It has always seemed ludicrous to me that home computing should be the one area in the computer field where hardware manufacturers seem to strive to ensure that their customers end up with machines that have a limited life, ie, are not compatible with more advanced or more powerful computers that are produced later.

Commodore is not alone in this attitude, Sinclair has done exactly the same with the ZX81, Spectrum and QL. None of

these machines is capable of running software produced for the other.

I think that maybe it is time that the manufacturers started considering the enhancement sales market as well as the new or second computer sales market (which must be starting to dry up now).

Mathematical mystery

A Crawley of Penrith, Cumbria, writes:

Q I am trying to find out how to calculate π to any given accuracy (more accurately than usually stored in the computer's Rom). I know it must be possible since various posters and books have shown the expansion of π correct to many, many decimal places. What method is used and is it possible to adapt it for a home computer?

A The calculation of π to masses of decimal places has kept mathematicians busy for some considerable time. Many books have been written on the subject of how to use 'calculating engines' to assist in the calculation of even more obscure decimal places. There is indeed an established method for the calculation of π which is documented in more books than I have had hot dinners.

The calculation is suitable for programming on any computer that allows floating point arithmetic to be performed. You need this type of capability to achieve the degree of accuracy required.

It may be simpler for you to simply store a value for π (obtained from one of the books you have seen) that has more decimal places than you require, and simply round up to the decimal place required by the particular calculation you are to perform.

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem **Peek it** Phil Rogers and every week he will **Poke** back as many answers as he can. The address is **Peek & Poke, PCW, 12-13 Little Newport Street, London WC2R 3LD**

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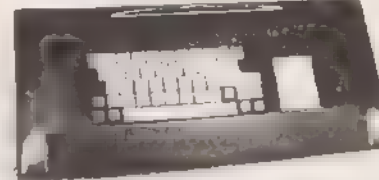
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CBM 64, Cassette unit, joystick, £150 of bought s/w up till books range. Bound, v.g.c. sell £290 ono may swap for synthesiser. Tel: 051 645 7820.

CBM 64 + C2N recorder, joystick, reference manual + s/w £195. Berkhamstead 4556.

COMPLETE CBM business system inc. CBM 64 1541 disk drive, MPS dot matrix printer, easy script m/p C2N cassette unit, easy stock, stock system, cassette, controller, 7 games joystick, manual + books £500. Tel: Aysgarth 329 after 6 pm.

VIC-20 software bundle 16K £5 Jet-pac 8K £15 Arcadia £20 bewitched £3 panic £4 M.L.B.A.T.E.T £2 avenger £6 skamable £3 paratroopers £3 sub hunt £1 3D maze £1 or the lot for £30 ono. (01) 517 3522.

CBM 64 Software originals for sale, including Hobbit, Solo Flight, Caesar, system 15000, black hawk etc. Most 1/2 price. Wanted the quick please phone 061 862 6024 after 7.

VIC-20 with C2N cassette deck, 32K switchable rampack, super expander, joystick, light rifle, 33 games including jelpac, skyhawk, computer war, 8 books, magazines, disc cover £190 ono. Phone Ongar (0277) 362517.

CBM printer MPS 801 + paper, £169 Tel: Gromes barnow 375 evs. deliver.

VIC 20 STARTER PACK, Joystick, games, book, 29 games worth £300. Quick sale £150 or swap for Spectrum + extras. Phone: Mark (eve's or weekend) 01-423 1305, will separate.

CBM PET SOFTWARE and spare parts including RAM chips, C2N recorder, keyboard and monitor, various roms, software (mainly games) on disks and cassettes. Any offers? (0244) 675717.

36-CBM 64 original games inc. Quadvix, Hobbit Revenge, Encounter, Loco, S. Express, Pamarama, Solo, Benchard, R.O. Moscow, Zaxxon, M.Mole, Guardian, P. Pigson, Colossus, Chess 2-0, etc. cost £300+-. Can't split £80+ - 01-863 5113 ask for Deepak.

VIC 20 Super expander cartridge £18 Machine code monitor cartridge £18 Lightpen + s/w £18. Programmers reference guide £5. All excellent condition. Phone 061-494 1187 after 6pm.

VIC 20 lots of software, books and the count cartridge. 8K expansion cassette recorder. Will accept £90 ono or swap for CBM64 with c2n recorder. Tel: 0536 711714.

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CBM 64 cassette recorder + software + Commodore 64 Exposed book + mags in folders, Teach Yourself Computing at various computer languages. Worth £100. Will take £50 ono. Quick sale. Tel: 01-743 3619.

VIC 20 original software for sale at 1/2 to 1/3 price. Including: Penits of Willy, Cosmic Firebirds and many others. Ring (0743) 60890 after 7pm. Between Monday and Thursday (Michael).

DRAGONS FOR SALE

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DRAGON 32 plus 2 joysticks with tape recorder and software £35 ono. Tel: 0491 35849 (Oxfordshire).

DRAGON HARDWARE: Hi-res £12, DASM £10, Quickshot I £7, Sprint £7, Textstar (word processor) £5, Dragon

Trek £3, Space Shuttle and Cruising £2.50 each. All 1st class condition and under 1/2 price. Tel: Craig on Wickford 65351.

DRAGON 32, 60 games + 4 cartridges inc. chess, 2 joysticks, dust cover. £150. Tel: 01-647 7604.

DRAGON 32 + joystick, 6 games and 4 manuals £110 ono. (0934) 813046.

DRAGON 32, in box, under guarantee + joystick, books, mags s/w, tapes, cartridge + more 185. Peter van Dieren, 32 Lloyd Road, Charlton SE7 8AN London.

DRAGON 32, Cassette recorder, 3 joysticks, books + mags + dust cover, £400 of original s/w, 46 Best Arcade Titles. £150 the lot. As New. Hornchurch 44866.

DRAGON 32 — lots of s/w Cassette recorder + joystick. Worth in excess of £500 £150 ono Tel: (0222) 598 585 after 8pm.

DRAGON software: Ninja Warrior, Cuthbert Goes Dipping, Frogger, Donkey Kong, Kataflia Attack, Election, Devil Assault, Skramble, Mr. Dig, Planet Invasion, Juniors Revenge, £4.00 each. Chess cartridge £10. Others £3. Maynard Heath 458 782.

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Woodoo Castle on Vic20. How do I stop the test tubes from exploding and killing me? And where do I find the missing page? Gary Tipples, 124 York Road, Carterton, Oxon.

Valhalla on Spectrum. How do you find the fourth quest - Skornir. I have the other three but can't get any further. Robin Moffat, 29 Donkin Terrace, North Shields, Tyne and Wear.

Tombs of Xelaps on Commodore 64. I can't get the torch lit and how do you get through the sandy door? David Raine, 37 Caroline Gardens, High Hound, Walsall, Tyne and Wear.

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Sherlock Holmes on Spectrum. How do you prove Mrs Jones killed Tricia? Where is the old mill road? David Thomas, 8 Forbes Close, Higher Faugan, Newlyn, Penzance, Cornwall.

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Colditz on Spectrum. How do I get the wire cutters? Where is the prisoner that needs help? D Bugden, c/o 65-66 Dean Street, London W1.

Invincible Island on Spectrum. How do you get help after a game? How do you get in the dingy? Adam Buckle, 188 Barnesley Road, Cudworth, near Barnsley, S Yorks.

Paradox on Spectrum. Where will I find a definition of reality? What use is the wooden door? Dave Brown, 47a Scarborough Avenue, Skegness, Lincs

Castle of Riddles on BBC. How do I open the safe in the courtyard and how do I get down the well (if I should)? Richard Branton, 7 Fairview Drive, Danestown, Aberdeen, Scotland.

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Hulk on Spectrum. How do you get through the door by the chief examiner? Peter West, 10 Grange Avenue, Falegrave, Scarborough, N Yorks.

Black Crystal on ZX81. How do I exit from Floor 1 in Map 3? I have got the visibility spell. Kevin Dixon, 32 Roxholm Road, Leasingham, Sleaford, Lincs

Pirates Cove on Vic20. Can someone please tell me what to do to catch the fish to feed the crocodiles. Gareth Maybank, 52 Arden Crescent, Dagenham, Essex.

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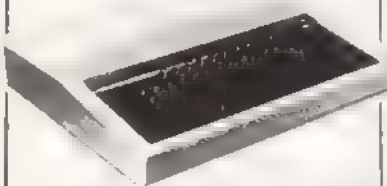
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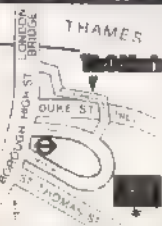
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Ship of Doom on Spectrum. How do you use the sonic screwdriver? How do you get the key from the glass case? Can you melt the ice? Gaving Read, 45 Avenue Road, Falsgrave, Scarborough, N Yorks.

Rescue from Castle Dread on Vic 20. I have reached the castle but how do you use the barrel there, or get in? Tom Maskell, 38 Southampton Road, Lynton, N Yorks.

Fantasia Diamond on Spectrum. How do I open the music room door? I have the diamond, violin, baton and books. Rod Jones, 18 Bultermere Drive, Allestree, Derby.

Golden Apple on Spectrum. Can you move the lever without breaking it? How do you light the gas

lamp? How do you cross the ravine? How do you climb the cliff? Andrew 'Davros' Simmons, 3 High Street, Drybrook, Glos.

Mountains of Ket on Spectrum. I cannot get past the dragon or the skull. Robert Mowe, 25 Saxham Street, Stowupland, Stowmarket, Suffolk.

Knights Quest on Spectrum. How do you rescue the princess? Where do you find a light to enter the dark tunnel? A Waters, 40 South Grange Avenue, Prestonpans, East Lothian, Scotland.

Fantasia Diamond on Spectrum. How do you cross the river and what does 'wait for it' mean? John Whelan, 114 Laburnum Grove, Runcorn, Cheshire.

Heroes of Karn on Commodore 64. How do you kill the spider, get past the witch and kill the vampire? M Berry, Pay Office, 1 Gordons,

BFOPO.

Lords of Time on Spectrum. How do I get past the cave-men? Brian Finnerty, 23 Towersey Drive, Thame, Oxon.

Inca Curse on ZX81. How do you get out of the fire room alive? Which articles do you need to get down the porthole? Seth Fellham, 141 Piccaso Way, Shoburyness, Essex.

Adventureland on Vic20. I cannot get past the bear which is blocking my way. Gareth Pemberton, 51 Redhouse Lane, Bredbury, Stockport, Cheshire.

Inca Curse on Spectrum. I cannot put the tyre out in the tyre room. Please help. Stuart Langridge, 17 Admiral's Road, Park Gate, Southampton.

Old Father Time on BBC. I am stuck in the clearing and lost in the forest. Scott Kelly, 12 Pollock

Road, Bearsden, Glasgow.

Special Operations on Spectrum. I cannot get into the compound. Michael Cooney, off Galway Road, Roscommon, Co Roscommon, Eire.

The Hobbit on Spectrum. Once through the wine cellar, how do you find lake town and 'bard'? where is the key for the mountain-side door? John Osbourne, 28 Edwin Avenue, Woodbridge, Suffolk.

Voodoo Castle on BBC. How do you get the ju-ju bag? Jason Wright, Carter Drive, Collier Row, Romford, Essex.

Hobbit on Commodore 64. I am trapped in the goblins dungeon. I have found the key and I have the sword, the rope, the golden key, the map and the curious key. Chris Barnes, 19 Scafell Way, Clifton, Nottingham.

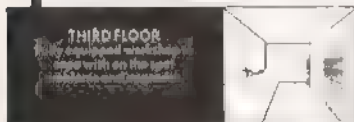
Hobbit on Spectrum. How do I escape from the goblins dungeon? How do I escape down the river from the elevenkings halls? James Haslam, 6 Sirmingbourne Avenue, Bush Hill Park, Enfield, Middx.

Valhalla on Spectrum. I cannot find Ofur and I have had the program for three months now. Help! Paul Waggett, 9 Lenton Drive, Churchdown, Southport, Merseyside.

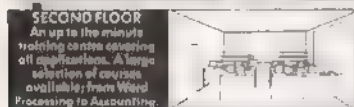
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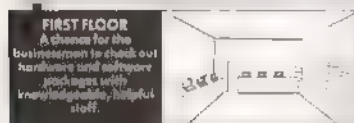
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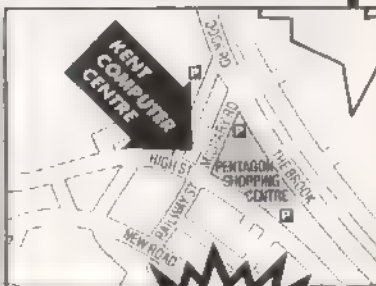
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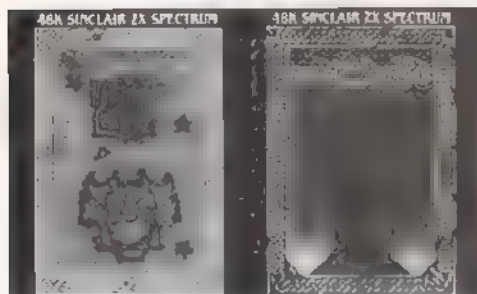
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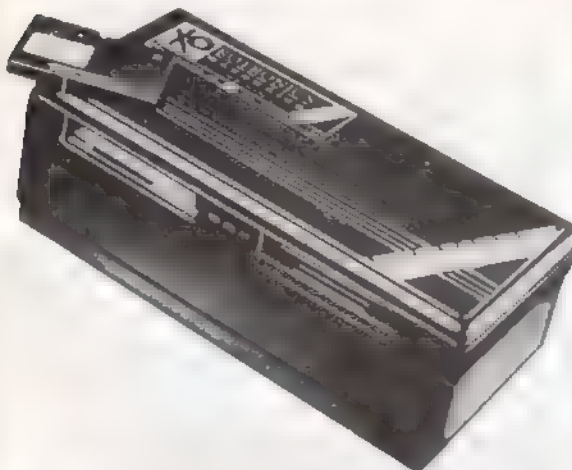


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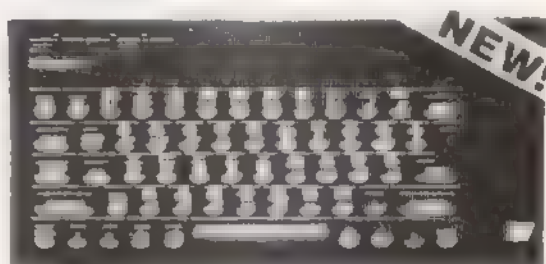
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(Figures compiled by Boots/Websters)

- Commodore 64**
- (3) **Overlanders** (Astrolog)
 - (-) **Staff of Karnath** (Eternity)
 - (9) **Scrabble** (Lectra Games)
 - (7) **D.T. Decathlon** (Oman)
 - (-) **Select 1** (Computer Records)
 - (5) **Crater** (Master Tronic)
 - (-) **Kick in the Pants** (Astral Games)
 - (-) **Jet Set Willy** (Software Projects)
 - (10) **BMX Racers** (Master Tronic)
 - (-) **Beach Head** (Commodore)
- (Figures compiled by Boots/Websters)

- Spectrum**
- (10) **Daley Thomson's Decathlon** (Oman)
 - (3) **Jet Set Willy** (SProject)
 - (-) **Cyclone** (Vortex)
 - (4) **Full Throttle** (Microimage)
 - (-) **World Cup** (Artec)
 - (9) **Matchpoint** (Baudou)
 - (-) **Tornado Low Level** (Vortex)
 - (-) **Pyramasata** (Microgen)
 - (10) **Beach Head** (Commodore)
 - (-) **Avalon** (Hewson)
- (Two titles tie for 8th position)
(Figures compiled by Boots/Websters)

- Dragon 32**
- (9) **Hutchback** (Oman)
 - (5) **Chuckie Egg** (A & F)
 - (9) **Dragon Chess** (Oman)
 - (4) **Cuthbert in Space** (Microdeal)
 - (1) **Manic Miner** (Software Projects)
 - (7) **Mr. Dig** (Microdeal)
 - (10) **Spells Magic** (Enlight Software)
 - (3) **Hungry Horace** (Malbourne House)
 - (6) **Knightmare** (Beyond)
 - (-) **Big Driver** (Master Tronic)
- (Figures compiled by Boots/Websters)

- BBC**
- (4) **Scrabble** (Lectra Games)
 - (3) **Elke** (Acorn)
 - (-) **Horse Lord** (Century)
 - (-) **Challenger** (Master Tronic)
 - (10) **Duck** (Firebird)
 - (9) **Football Manager** (Additive)
 - (-) **Gold Digger** (Firebird)
 - (5) **Mini Office** (Database)
 - (3) **Elke** (Acorn)
 - (10) **Jet Pac** (Ultimate)
- (Figures compiled by Boots/Websters)

- Atari**
- (1) **Attack of Mutant Camels** (Lectra)
 - (2) **Zaxxon** (Commodore)
 - (4) **Gridrunner** (Lectra)
 - (9) **Slinky** (Centros)
 - (7) **Encounter** (Hi-Tech)
 - (-) **Sub Commander** (Thom EMI)
 - (-) **Tank Commander** (Thom EMI)
 - (-) **Pacman** (Atari)
 - (-) **Centipede** (Atari)
 - (10) **Brass Kopper** (E/S)
 - (-) **Smeeple Jack** (E/S)
- (Three titles tie for 8th position)
(Figures compiled by Boots/Websters)

- Amstrad**
- (7) **Snooker** (CDS)
 - (9) **Hunter Attack** (Anurog)
 - (8) **Forest of Worlds East** (Interceptor)
 - (-) **Code Name Max** (Amsoft)
 - (3) **Chords** (Macro Power)
 - (-) **Chow** (Anurog)
 - (10) **Star Commando** (Terminator)
 - (-) **Rollad in the Cave** (Amsoft)
 - (-) **Hunter Killer** (Amsoft)
 - (-) **Rollad in the Dunes** (Amsoft)
- (Figures compiled by Boots/Websters)

Diary

| Event | Dates | Venue | Admission | Organisers |
|--|--|-----------------------------------|------------------------------------|-------------------------------------|
| Which Computer? Show (over 100 only) | Jan 15-17 1985 10.00am-5.00pm Jan 18 10.00am-4.00pm | NDC Birmingham | Free in advance from organisers | Clapp and Poble 01-861 5051 |
| Hi-Technology and Computers in Education Exhibition | Trade: Jan 24 10.00am-1.00pm Educational: Jan 24-1:00pm-5.00pm Jan 25-1:00pm-4.00pm Public: Jan 26 11.00am-6.00pm | Bathurst London EC2 | Free in advance from organisers | Computer Marketplace 01-830 1812 |
| Apicom and Micro Computer Show | Feb 5-7 10.00am-6.00pm | Kensington Town Hall London W8 | Free in advance from organisers | Parsons 01-261 2354 |
| The LET VS International Trade Show | Feb 17-18 10.00am-6.00pm Feb 19 10.00am-4.00pm | Olympia 2 London W6 | Free in advance from organisers | Turist: Whitland 0623 777000 |

Readers' Chart No 4

- (1) **Daley Thomson's Decathlon (Spectrum/C64)**
- (2) **Knight Lore (Spectrum)**
- (5) **Underwurke (Spectrum)**
- (-) **Booty (Spectrum/C64)**
- (6) **Beachhead (C64)**
- (3) **Elite (BBC/Electron)**
- (4) **Ghostbusters (C64)**
- (-) **Kokotoni Wilf (Spectrum/C64)**
- (-) **Sherlock (Spectrum/C64)**
- (-) **Match Point (Spectrum/C64)**

Ocean
Ultimate
Ultimate
Firebird
US Gold
Acornsoft
Activation
Elite
Melbourne House
Prion

Week 4 Winners - Simon Anton, Tudor Road, South Croydon and Stuart Mastless, Corbets Tey Road, Upminster, Essex who share the £100 'pot' and receive £50 each.

Now voting on Week 6 — £50 to win

Each week Popular is compiling its own special software top ten chart — compiled by YOU.

All you have to do to vote is to fill in the form below with the names of your current three favourite software titles (or copy the form on to another sheet if you don't want to damage your magazine) and send it off as soon as possible to: Top 10, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

We will send £50 each week to the person who correctly predicts that week's top three. If there is no winner then that week's prize is automatically added to the chart on which voting is currently taking place, and so on until someone gets it right! (If there is more than one winner that week's prize — whatever the 'pot' stands at — will be split equally between all the correct entries.)

Voting for Week 6 closes at 2pm on Wednesday January 2 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges' decision is final.

| | |
|----------------------|--------------------------------|
| Name | My top 3: Voting Week 6 |
| Address | 1 |
| | 2 |
| | 3 |



COMPELLING

What with *Elite*'s continuing chart dominance it's possibly inevitable that most other BBC releases are tending to be overshadowed including a re-



of puzzles. There is also an adventure equivalent of becoming *Elite* — venture far enough into the adventure and you may enter the Master section — an area so difficult that if you go in you will not be able to leave.

It's silly to attempt a serious analysis of an adventure as large as this until it's been around a while and time has been spent with it. My brief session has led me to believe it's pretty compelling. I found a lot of interesting looking locations and solved one puzzle only to be killed. I'm going back for more, though.

Program Acheton
Price £17.95
Micro BBC
Supplier Acornsoft
London Road
Wellingborough
Northants NN8 2RL

that happens in the game is you go no further, unable to penetrate any further into the labyrinthine mysteries and hating yourself for being such a dummy.

Characters from previous Arnolds turn up here — Mexican Pete, Lord Erbus; Rochdale features heavily as do grave-stones and daffodils. There are cinematic references aplenty for buffs and conspiracy theorists will enjoy the paranoia that pervades the adventure.

Program *The Wise and Fool of*
Arnold Blackwood
Price £5.50
Micro Amstrad CP464
Supplier Nemesis
10 Carlrow Road
Ringstead
Kettering
Northants NN14 4DW

Herefordshire — you discover your cottage is the subject of much rumour, perhaps it contains a mystery, or treasure even...pretty creepy eh?

The different sections of the screen display are highlighted in different colours, I suspect that the game is more funny than serious since the first couple of locations contained a dog with money, a Commodore computer, a suit and other silly objects — very rustic.

Program *Country Quest*
Price £5.50
Micro Commodore 64
Supplier Wye Valley
Parlour House
Kinnorsley
Herefordshire

RUSTIC

Country Quest is an adventure for the Commodore 64 is the classic text mould — something of a rarity among recent Commodore releases. The plot appears to entirely lack dragons and mystic orbs — another big bonus.

The story begins with you taking a holiday in darkest



WISE AND FOOL

Amstrad owners into adventuring have been kept occupied (almost singlehandedly) by the *Arnold Blackwood* series of adventures by Nemesis Software. The third section has recently been completed and is entitled *The Wise and Fool of Arnold Blackwood*.

Although text only, the screen design for the program has been carefully considered so that descriptions, inputs, objects and responses are clearly delineated.

The blurb for the game boasts that there are no sudden deaths, ie, merely going East rather than West isn't going to leave you impaled on a spear or blasted by a death ray. All

PENGUINS

Manic Miner, the program that spawned a million inferior copies has reappeared, with a version for the Amstrad. How well does Willy travel? What's the music? Are there still penguins? These, I know, are the crucial questions Amstrad owners will ask.

A close examination of the various screens in the demo mode (I never got past the sixth screen by legitimate means) reveals that they are almost exactly the same as the Spectrum ones almost pixel by pixel.

If you have an Amstrad you will, I'm afraid, have to buy *Manic Miner* or else deny arcade games altogether.

Program *Manic Miner*
Price £
Micro Amstrad
Supplier Amsoft
Brentwood House
169 Kings Road
Brentwood
Essex

cent group of releases from Acornsoft. Of these several are of more than passing interest and *Acheton* may keep Tony Bridge's postbag full for weeks.

Apart from anything else, it is text adventure so vast it's contained on two discs. It understands fairly complicated sentences like, for example, Take all but lamp and bottle and Drop the Keys. Several commands can be linked with each response appearing to each part of the conjoined sentence on screen but separately — so you can work out what bit didn't get the response you hoped for.

There are no graphics, but the screen is split into two sections, descriptions and command/result. There are 350 locations to explore, treasure to collect for points and dozens

This Week

| Program | Type | Machine | Price | Supplier | Logo | UI | Amstrad | Price | Kuma |
|----------------------------|------|---------|-------|-------------|-----------------------|-----|--------------|--------|-------------|
| <i>Fantasia Diamond</i> | Ad | Amstrad | £7.95 | Hewson | Sim | Arc | BBC | £7.95 | CSM |
| <i>Jewels of Babylon</i> | Ad | Amstrad | £5.00 | Interceptor | Starlix | Arc | BBC | £7.95 | Paion |
| <i>Wise and Fool of AB</i> | Ad | Amstrad | £6.50 | Nemesis | <i>Country Quest</i> | Arc | Commodore 64 | £5.50 | Wye Valley |
| <i>Manic Miner</i> | Arc | Amstrad | £7.95 | Amsoft | <i>Dungeons of Ba</i> | Ad | Commodore 64 | £12.95 | Quicksilver |
| <i>Technician Ted</i> | Arc | Amstrad | £7.95 | Hewson | <i>3D Lunatic</i> | Arc | Commodore 64 | £7.95 | Hawson |
| <i>Heathrow Intimation</i> | S | Amstrad | £7.95 | Hewson | <i>Big Ben</i> | Arc | Commodore 64 | £7.00 | Interceptor |

PICTURES

As has been said many a time in this and other columns the *Quill* adventure writing system has single-handedly raised the inventiveness of text adventures by allowing people with good ideas to implement them without recourse to machine code. The *Quill* allowed for the creation of text only adventures, but the latest development from Gilsoft, *The Illustrator* changes all that — now your *Quill* adventures can be illustrated.

The *Illustrator* is designed to be used after the basic text adventure has been created. What you get is a rather good artist program where each picture you create is assigned to a particular location — a cursor moves around the screen under keyboard control, you choose colours, rate of movement (for fine lines the cursor can be moved — one pixel at a time).

One very sophisticated feature of the program is a subroutine which enables you to define pictures for use within other locations — thus, for example, in a dungeon location

or a maze section you might want some very similar looking rooms, perhaps the windows and doors may all look the same. Simply design one window and one door and *voila*, as many as you want. The 'scale' feature lets you have bigger and smaller versions of a designed shape — an excellent feature.

Shapes can be filled with any of 255 different kinds of shading and for those with a meticulousness bordering on the insane, there is a freestyle plotting option that lets you switch on individual pixels.

All in all you're getting just about the best designer program I've seen for the Spectrum which just happens to be compatible with the *Quill*. One other amazing detail — the system works by using overlays meaning that effectively no extra memory is used; in fact, Gilsoft say you get an extra 5K — leaving a total of 32K for your adventure. You have the technology, now let's have the ingenious adventures.

Program *The Illustrator*
Price £14.95
Micro Spectrum
Supplies Gilsoft
30 Hawthorn Road
Barry
South Glamorgan

SANTA

All things considered, there are not too many Christmas programs around, ie. programs which feature Santa Claus, reindeer, chimneys, toys, Christmas trees and the like. Probably this is because the merry season doesn't last long enough — when it's over who's going to buy your *Perils of Santa Claus* epic?

Pick of the week

The almost mythical QL chess program is finally here and it is, quite simply, the best chess program available on any micro, not only because it beats the pants off pretty much every other chess program (and most human players) but because the graphics are stunning.

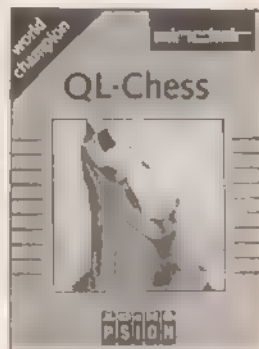
The chess board is presented edge on — the back appearing 'higher' than the front — thus you look on the proceedings as you would playing a normal game rather than from the top down as in all previous efforts. This means that the highly detailed chess pieces appear to move around and behind one another — a startling effect.

Every option you could conceivably want is provided — take back move, set up positions, change ends, hint (very useful), analysis (you can see the computer trying out different ideas), next best and so on. Particularly useful — the levels are defined according to how much time they take to respond, the choices range from a second or so to four minutes, so you know how long you'll need to wait for the next move. The 'when the hell is this machine going to decide to do something' syndrome ruined

QL QUEEN

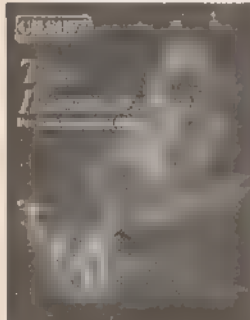
many a computer chess program.

Psion's *Chess* is something of a salvation for QL owners, there should just be time to slip one into the Christmas stocking and have something to play with on the machine other than the four utilities — it augurs



well for future software if this is what the QL is capable of. Incidentally, the blasted thing said 'bad or changed medium' four times before it loaded.

Program *Chess*
Price £19.95 (£14.95 through Qlub)
Micro QL
Supplier Sinclair Research
Stanhope Road



Merry Xmas Santa is one of the exceptions and comes from Icon Software for the BBC. Your task is to guide Santa across the rooftops delivering presents to all the houses. Try to avoid the slope of the roof (or you'll slip to a snowy death) and, on later screens, rather lame looking

snowballs.

Here and there, there are bonuses in the form of cake, pudding and sherry. The graphics are played as you leap across the rooftops. But arcade addicts be warned, technically it's nothing special — quite slow in fact, and whilst later

This Week

| | | | | |
|------------------|-----|--------------|--------|----------------|
| Castle of Jassom | Arc | Commodore 64 | £12.95 | Quicksilver |
| Monopoly | S | Commodore 64 | £12.95 | Liesure Genius |
| Space Shuttle | ■ | Commodore 64 | £9.95 | Activision |
| Mubungu | Ad | Dragon | £1.99 | Snaps |
| Cecil Plays 21 | S | Dragon | £1.99 | Snip |
| Crapz | ■ | Dragon | £1.99 | Snip |
| Telepath | Ut | Dragon | £1.99 | Snip |
| QL Chess | ■ | QL | £19.95 | Sinclair |

| | | | | |
|-----------------|-----|----------|--------|---------------|
| Airwolf | Arc | Spectrum | £6.95 | Elite |
| Technician Ted | Arc | Spectrum | £5.95 | Hewson |
| Highway Code | Ed | Spectrum | £6.95 | Rose Software |
| Physics O Level | Ed | Spectrum | £6.95 | Rose Software |
| Panzer Attack | S | Spectrum | £5.95 | Lothlorien |
| Space Shuttle | ■ | Spectrum | £7.95 | Activision |
| The Illustrator | Ut | Spectrum | £14.95 | Gilsoft |

Key: Ad — adventure Arc — arcade Ed — education
S — strategy-simulation Ut — utility



screens get additional hazards they are all basically the same — not much variety here. But in a generous Christmas mood of warmth and fellow feeling, I will say that little children might love it and for them the simplicity may be a bonus.

Program Merry Xmas Santa
Price £7.99
Micro BBCB
Supplier Icon Software
65 High Street
Gosforth
Tyne & Wear

HAZARDOUS

Airwolf is the latest Spectrum release from Elite, makers of *Kokotoni Wif* the game is based on the popular blam-blam helicopter program. Usually TV spin offs are pretty dire, but *Airwolf* is graphically excellent and as a game it's not at all bad.

The idea, inevitably perhaps, is to pilot your copter through some incredibly difficult and dangerous terrain to rescue several important scientists and thus redeem the free world for another week.

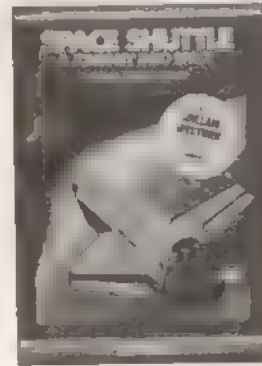
The first obstacle you come across may be enough to make you give in — your path is blocked by an enormous wall which you must blast a path through using a slightly wobbly laser.

There are hazards ■ be negotiated, missiles, things to be blasted and some very detailed background graphics. Probably the only thing stopping the program from being absolutely whizzo is the relatively small number of screens (about 12) which seems a little small, but since I never get beyond about the second screen, perhaps that doesn't matter all that much. ■ you're a fan of the TV program you'll probably love it.

Program *Airwolf*
Price £6.98
Micro Spectrum
Supplier Elite
55 Bradford Street
Walsall WS1 3OD

SPACED OUT

Activision's *Space Shuttle* is a program that purports to be an extremely authentic recreation of shuttle flight, complete with



docking, re-entry and a trillion calculations necessary for a successful flight. It's important to stress that *Space Shuttle* is primarily a simulation, not an arcade game, although some of the thrills involved may be surreal.

Thankfully an overlay is provided to indicate the main control keys — there are 17 of them. Vital also is an option to take a simulator flight which lets you try out most manoeuvres without the usual risks.

An extensive manual indicates just how complicated flying the shuttle can be — an almost endless list of things that affect other things and factors that have to be considered — successful tasks require very precise flying indeed.

The graphics are reasonable, and the manual good. If you accept that it isn't 'blast a minute' but more a question of subtle control manipulation, you'll like it a lot.

Program *Space Shuttle*
Price £7.99/£9.99
Micro Spectrum/
Commodore
Supplier Activision
15 Harley House
Marylebone Rd
London NW1

WARNING

And now a special request. *F.S.S. Liberator* is a program that's been out a while, but I've never seen it, ie, it wasn't sent for review and I haven't seen reviews elsewhere. However, I was sent a copy of it by a retailer who thought it was so bad people ought to be warned about it.

F.S.S. Liberator is an amazingly bad program, a really poor version of *Scramble* with ugly blocks making up the mountain



landscape and nasty sprites for spaceships and missiles.

The problem with this one is that it all comes in a big box with a stupid colour poster thrown in — you'd be forgiven for thinking this was going to be something pretty special. There are two possibilities here; the manufacturers Nebulae Software really haven't got any idea what a good game ■ and have moved into the software field from double glazing or selling ropey video tapes.

Or alternatively, they know the game is awful, but figure (not incorrectly) that nice packaging may be enough to dupe enough retailers into stocking the thing.

Program *F.S.S. Liberator*
Price £1.50
Micro Commodore
Supplier Nebulae Software
Kilroot Park
Carrickfergus
Co Antrim

Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market. If you have a new game or utility which you are about to release send a copy and accompanying details to: New Releases, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

This Week

Activision, 15 Harley House, Marylebone Road, London NW1. 01 486
Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex. 0277 230222
CSM, Suite 38, Strand House, Great West Road, Brentford, Middlesex TW8 9EX. 01 560 4191
Elite, 55 Bradford Street, Walsall WS1 3OD. 0922 611215
Gilsoft, 30 Hawthorne Road, Barry, South Glam. 2CF 8BLE. 0222 41361
Hewson, 7 Grahame Close, Blewbury, Oxon OX11 9QE. 0235 832939
Interceptor, Interceptor Micro's, London House, The Green, Tadley Hampshire, 07356 71 145
Kuma, Kuma Computers, 12 Horseshoe Park, Pangbourne. RG8 7JM. 07357 4335
Liesure Genius, 3 Montagu Row, London W1H 1AB. 01 935

4622
Lothlorien, 56a Park Lane, Poynton, Cheshire, SK12 1AE. 0625 876642
Nemesia, 10 Carlow Road, Ringslead, Kettering, Northants NN14 4DW
Pslon, 22 Dorset Square, London NW1 6QG. 01 723 9408
Quicksilver, Palmerston Park House, 13 Palmerston Road, Southampton, Hampshire SO1 1LL. 0703 20169
Rose Software, 148 Widney Lane, Solihull, West Midlands B91 3LH. 021 705 2895
Sinclair, Stanhope Road, Camberley, Surrey. GU15 3PS. 0276 686100
Snip, PO Box 20, Woking, Surrey. GU21 3OW
Wye Valley, Parton House, Kinnersley, Herefordshire. 05446 202



MSX contest

Last week I was given (temporarily, I might add) seven MSX computers to review for this magazine.

It was really quite difficult because they were all, to all intents and purposes the same machine with only superficial differences. In fact, it was hard not to turn the review into a beauty contest...

Loud tuneless fanfare

Mix out of the opening titles in a shot of our host, a large Irishman with a winning personality.

WOGAN (for it is he):

"Hello and welcome to the 1985 MSX United Kingdom contest. We've a star-studded evening for you tonight, and, as you know, it is our task to choose just one computer to go on to represent the United Kingdom in the MSX World competition. But first, let's meet the judges"

Cut to a close-up of a rather world-weary man

GARY KNOALL:

"Good evening. I'm much more interested in real computers — you know, anything American costing over £1,500 — but I'm here tonight to lend some credibility to the proceedings."

Close shot of a keen-looking youngster in what is obviously his father's suit

STEVE F LOADER:

"My name's Steve Loader and ever since being allowed to keep my review model I have been considered an expert on MSX computing."

After a small technical hiatus we eventually settle on a close-up of a smoothly dressed young woman

TERESA BLAZE:

"As a leading journalist I specialize in writing copy that does not offend our advertisers. I'm here to prove that there is no sexism involved in this evening's proceedings."

After the sound of the stage manager trying to start some applause we return to our host

WOGAN

"In a moment we'll be seeing the contestants, but first please welcome The Morris Dancers with their version of *All I want for Christmas*."

The start of the routine is accompanied by the sound of televisions being switched off all over the country...

If MSX computing does take off then things could become almost that trivial.

The Japanese are not known for resting on their laurels — even if a manufacturer is producing a highly successful machine, there is likely to be a new model every year.

Yet, unable to change the basic components, will Panasonic bring out a computer with a built in alarm clock/radio?

Could Canon build a machine that automatically rewinds the cassette once the tape has loaded?

At least it would give us something more to consider than measurements, trim and matching accessories.

Jeff Naylor

Simple Simon

Puzzle No 138

The pantomime season is upon us — and here is our very own version of 'Simple Simon'.

Once upon a time there lived a poor orphan boy called Simple Simon. He was very good and always ate his greens, but the villagers teased him cruelly. One day while walking through a lonely part of a dark forest he rescued an old lady from the grip of robbers. But, unexpectedly, she turned out to be a good fairy in disguise.

"For this kind act," she said, "remember these words — Your lucky number is 13 less than 13 times the product of its digits." With this she vanished in a puff of smoke.

Now it so happened that at the Royal Palace, the King was counting his money in the royal vaults when the door slammed shut. The only way it could be opened was by means of a five-digit combination known only to the King, who was not able to communicate it through the thick walls. A plea went out for anyone who might know the combination. Simple Simon stepped forward, much to the amusement and derision of the people. Remembering the good fairy's words, he entered his choice of number, and the door of the vault swung open. Simon was amply rewarded, no-one ever teased him again, and everybody lived happily ever after.

Can you say what the combination was?

Solution to Puzzle 133

The following numbers also share the same property as Tommy's age: 12, 18, 28, 32, 44, 45, 50, 52, 63, 68, 75, 76, 82, 96 and 99.

Taking numbers in the range two upwards, the program extracts their whole number divisors and tests to determine if the product is equal to the square of the original age.

```
10 LET AGE = 220
20 LET SQUARE = AGE * AGE
30 LET P = 1
40 FOR N = 2 TO AGE - 1
50 LET D = AGE/N
60 IF VAL(STR(D)) = 0 THEN LET P = P * D
70 NEXT N
80 IF P = SQUARE THEN PRINT AGE
90 LET AGE = AGE + 1
100 IF AGE > 100 THEN STOP
110 GOTO 20
```

Winner of Puzzle No 133

The winner is Mr P H Webber of Ridgeway Rd, Salisbury, Wiltshire, who receives £10.

Rules

If the puzzle can be sensibly solved using a computer, then the winner will have included a listing of the program used to find the correct answer. The closing date for Puzzle No 138 is 4 January 1985.

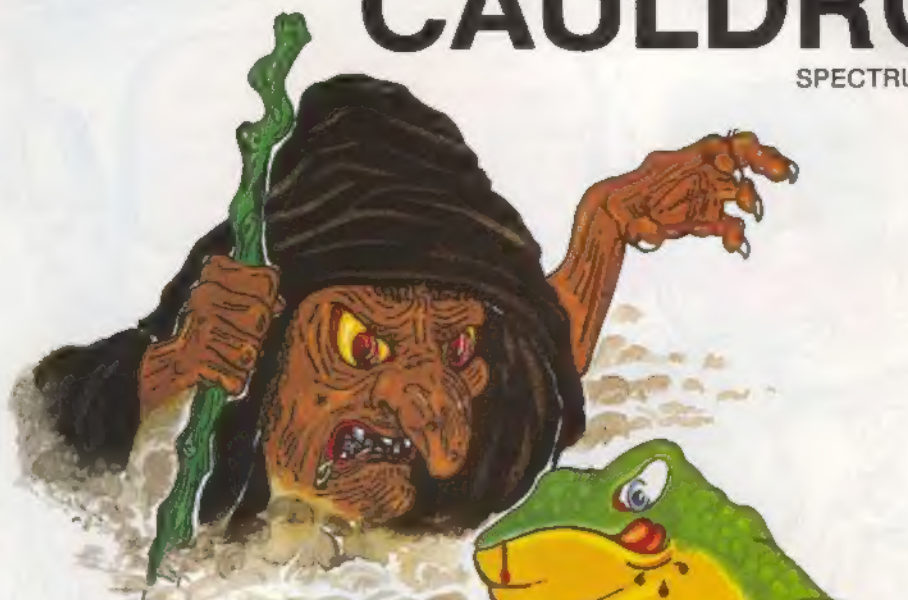
The Hackers



Cronies and Frogs in Mikro-Gen's Progs....

WITCH'S CAULDRON

SPECTRUM 48K £6.95



Gor blimey,
a hopping good
programme



MIKRO-GEN

44 The Broadway, Bracknell, Berks. 0344 427317

SOMEWHERE IN A CAR-
PARK, SOMEWHERE
IN FLAND

PI-RENNIAL JOY AND PEACE FROM AUTOMATA TO ALL OUR CUSTOMERS

EXIT AND
LIFT - A STAR IS BORN!

RIGHT ON! AND HERE'S MY
CHRIZZY PRESENT TO YOU!
DEUS EX MACHINA FOR ONLY
£10 (REG £15!) - ONLY WITH THIS
TALKS BUBBLE - SO CUT IT OUT
AND SEND IT ALONG WITH YOUR
MONEY TO AUTOMATA FOR
THIS SPECIAL BARGAIN!

THE WORLD
SHALL KNOW
OF THIS!

SKETCH
PAD
PAPER
CRAYONS
EVENING

POGGY'S
VIDEO
WAS
LARGE

AUTOMATA U.K. LTD.
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PORTSMOUTH, HANTS.
PO4 9DA, ENGLAND
Tel. (0705) 735242
V.A.T. No. 389 9542 33

UNCLE GROUCHO
HERE, FROM TINSEL-
TOWN! DON'T FORGET
WHAT CHRISTMAS IS REALLY
ALL ABOUT: EXTRAVAGANCE,
INDULGENCE, TOO MUCH T.V.,
APPALLING RELATIVES!...

DASH MAH
BABY!

THAT'S YOUR TAX-
RELIEF, BUDDY-AND
THAT'S MY BRIBE
- THANKS!

*48K
SPECTRA
ONLY,
FOLKS!

